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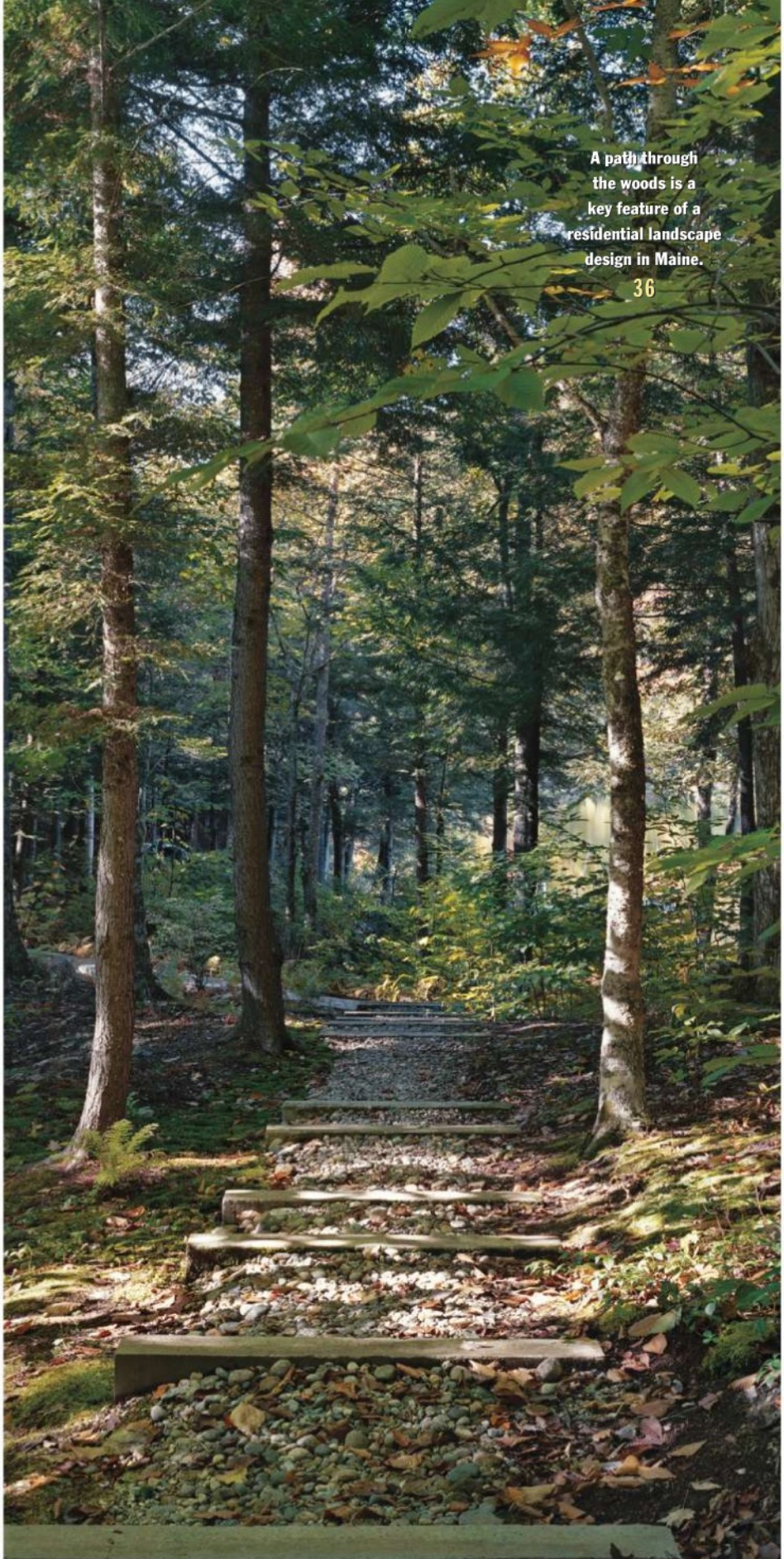

A path through the woods is a key feature of a residential landscape design in Maine. 36

ELIZABETH FELICELLA

ON THE COVER

A repurposed stormwater pipe becomes a fanciful walkway at the new Winter Olympics athletes' village at Southeast False Creek in Vancouver, British Columbia, page 22. Photograph *by* PWL Partnership

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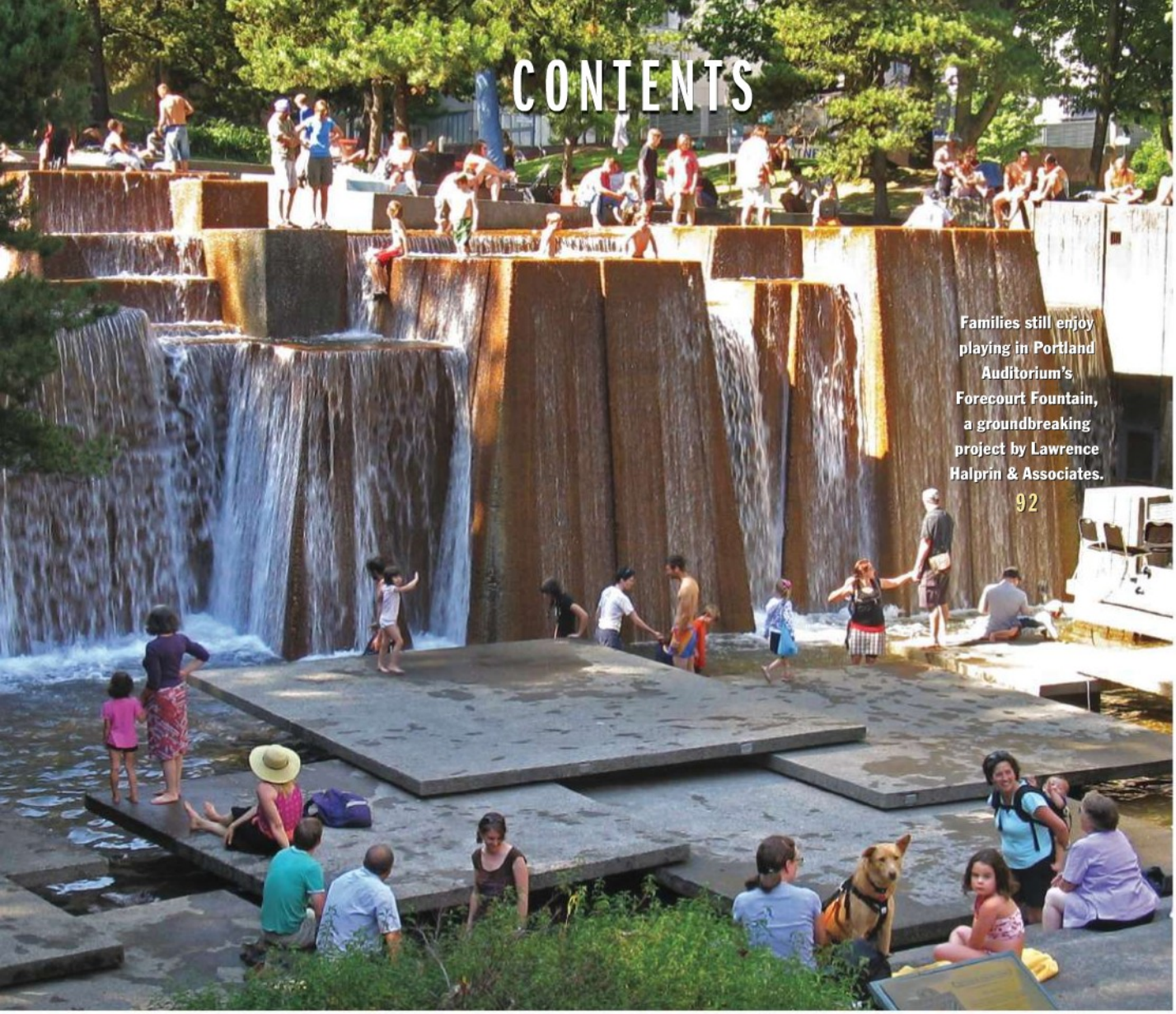

Families still enjoy playing in Portland Auditorium's Forecourt Fountain, a groundbreaking project by Lawrence Halprin & Associates.
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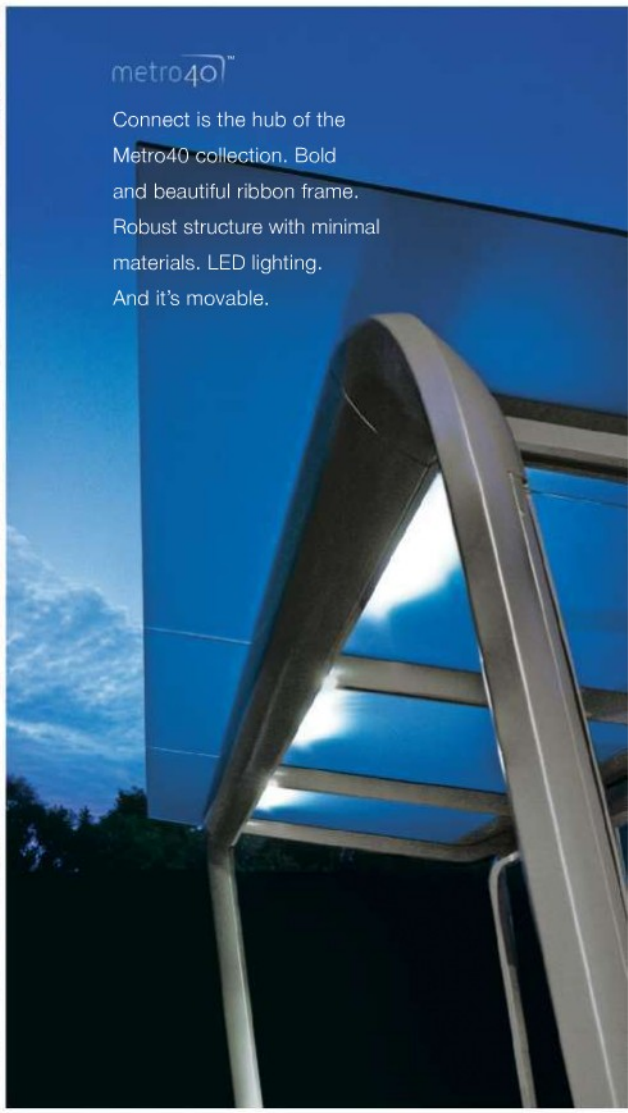

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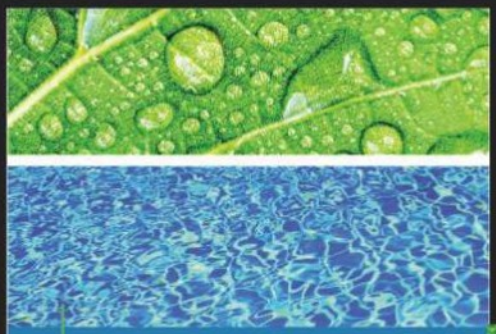

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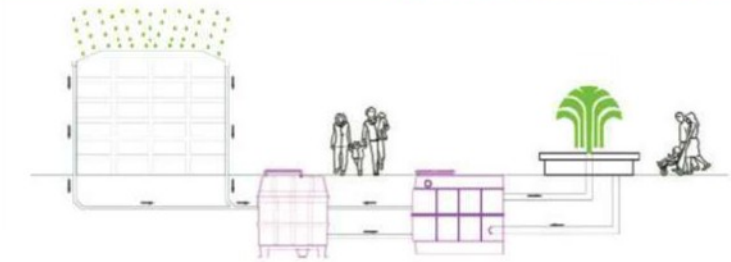

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LAND MATTERS

Lawrence Halprin at Ghirardelli Square

IN A FIELD THAT HAS HAD, and still has, problems with its professional identity and recognition, Lawrence Halprin established himself as a highly visible and clearly defined practitioner. There were others. But none had the presence before a wide audience of professionals, clients, and the general public that Larry had (see "Lawrence Halprin: 1916–2009," page 92). All too often the landscape architect is seen as a subservient design team member to architects. Larry wouldn't allow that.

I was a principal project designer in Halprin's office from the late 1960s through the late 1970s. To me, at the time, Lawrence Halprin Associates was unique. Though Larry's influence was always felt on the projects the office produced, there was great freedom for individual project designers to author their own designs and to take them all the way from initial concept to design detail. Compared to my experiences as a young designer in other offices, this was very different. Larry assembled people with talents in a wide range of professional fields and let them do their thing in a synergistic way.

It was a place where the work was driven by art and the user experience. Not the science, not the planning, not even the program. Those of course were important and integral parts of the creative process, but the art and the experience had to be there. Larry felt that the finished project should be interactive with the user. People should be able to get physically involved with the place. If it was a fountain, the user should be able to experience the water directly. If it was an urban street, the user should be able to modify the street with his or her own uses and activities at different times of the day, month, or year. Just as the groundbreaking "Take Part Workshops" made the project design process interactive and participatory, the projects that resulted were also interactive and participatory.

Today, most landscape architects regularly do community input activities—there are even firms that specialize in such workshops—but with Larry the process was more artful. He orchestrated workshops that let people really see their environment, even find new things in places they interacted with every day. Though the legacy of the design workshop has expanded, I think a little of the spirit has eroded. Larry wanted people to experience the joy of the landscape—even the joy of beginning a new design—not just sign in, draw on a map, and write a few comments.

So what influence will Larry continue to have on our profession? I know that both his focus on art and experience and his insistence on the full recognition of landscape architects have affected me and my design approach as I have continued my career. But one thing is for sure: Larry was a dominant force in the field for a long time. He was a superstar who affected many people associated with him and even many who weren't. His influence has been and will be felt, directly or indirectly, as we move forward as a profession.

Larry knew what we would have to be if we wanted to be taken seriously: We would have to be leaders, innovators. Larry felt the landscape architect had the capacities and abilities necessary to be a leader, *the* leader, on par with the biggest star professionals in architecture. His actions and abilities set an example for the profession of landscape architecture. I hope we can continue to learn from the legacy, even though the man is gone.

Dean Abbott
Adjunct Professor at the University of Minnesota

LETTERS

Where Do I Play?

"IS IT BEAUTIFUL? Where do I play?" (Land Matters, December). These two questions are really the same side of a coin.

Some sociologists and health professionals will tell you that good health and looks require a playful, participatory life. If that is true, should we not also apply the principle to our landscapes?

If a park is not played, enjoyed, and participated in, what happens? History has shown us built environments that do not take into account the local inhabitants' way of life, way of use, and way of play almost invariably fall into decay. Decay reveals itself in poor upkeep, graffiti, and desolation. Without "play" a place becomes "ugly and unhealthy." Hence, constituency is a must in the design process.

Designers cannot be the moral compass of either the design process or the end product. Designers who think they know better than a place's inhabitants will inevitably incur the criticism of the public. Certainly, we designers have a wealth of knowledge that can mediate the needs and wants of the public with the demands of sustainable economic programming to create spaces that are both used and enjoyed for their beauty.

ED WILMOT
Greenville, South Carolina

Separating Program from Design

INTERESTING TIMING on this article ("The Biggest Little Park in the World," December). I had read in the *Metro* newspaper that the Friends of Rittenhouse Square in Philadelphia "called in the guy who fixed Bryant Park" to make improvements to the square. When I opened the paper to the article and saw no mention of Laurie Olin, FASLA, I was surprised. The Friends brought in Dan Biederman, who was credited for turning Bryant Park around in the 1990s. Interestingly, the Friends of Rittenhouse Square want to make improvements "on a host of design and operating issues, such as horticulture, lighting, paving materials, event programming, and park management and staffing." In the case of Bryant Park, the work of the programmer paved the way for one of the most successful urban spaces in North America. Having said that, I find the existence of both in a project as something with limitless potential. However, I wouldn't be surprised if in some cases the relationship between the programmer and the landscape architect was a nightmare and resulted in poor design. It truly depends on the complaisance of both the programmer and the landscape architect to collaborate with one another.

LUKE KELLER, ASSOCIATE ASLA
Philadelphia

SORRY TO BURST ANYONE'S BUBBLE, but programming is just another name for the Same Old $#%! (SOS) that has been repackaged for today's use.

Programming components of inventory/analysis, wants vs. needs, opportunities/limitations, and adjacency/proximity (the list could go on forever) have all been part of good landscape architectural design from the genesis of the profession. However, it's only come into a subspecialty of its own relatively recently.

I've observed over the past 47 years in my work as a licensed landscape architect that the professions of architecture and to a lesser degree engineering have found it "cool" to reinvent what they do every now and again. They seem to need new buzzwords and catchy phrases to make what they do seem more technically complicated, more valuable, and more mysterious than it really is. As in health care, architects and engineers have "unbundled" their services to create marketing advantages, which is fine. But they want to BS the rest of us in the design professions into thinking that it's "new and improved" when it's still the SOS.

To every trained, educated, and experienced landscape architect, programming, no matter what we call it, is inherently essential to good design. Done independently by another or included by the designer doesn't make it either better or worse so long as it's done and done right.

Personally, I believe architectural firms that have specialized in "programming" are having their design skills atrophy, while those firms that now hire "programmers" are losing their edge in being able to think a design project through.

Fred Kent says, "The program needs to be independent of any designer because you know as well as I do, if you have the designer do the vision, it's really only about the design."

What a crock to generalize that way! Sounds to me as if he must be that kind of designer himself and thinks the rest of us are, too. Like Bob Eury, I sure wouldn't "want Fred [Kent] designing it either."

DAVID C. RACKER, FASLA
Bountiful, Utah

Discovery Green in Houston

HARGREAVES ASSOCIATES

PROGRAMMING is just a part of good design.

I do like the term as it well describes the part of the process that needs to occur before work starts at the drafting table (read: computer).

I do residential work, so my programming is much easier than public work. But without the program, I don't feel I can come up with a successful design. But in a way, the clients come up with their program by themselves.

Once I know what clients need, how they will use a space, what works in the existing site/architecture, I can design. I have to be able to ask the right questions—it's part of my job.

LYNN WILHELM
Cary, North Carolina

I AGREE WITH EVERYONE who believes that programming is best when well integrated into the total project process, similar to engaging contractors early on when possible: The program informs the design, the construction technique/opportunities/constraints inform the design, and the design allows the program and construction to occur. It is only the unscrupulous (either designer or "programming consultant") who would limit the due diligence of predesign services to anything less than a full exploration of stakeholders' (that includes the site itself) needs, wants, opportunities, constraints, and imagination. Of course end users need to be part of any legitimate programming. For us, the best projects are those in which program is less preconceived at the start, and everyone's best skills are used to make the most of a site—for aesthetic engagement, technical advancement, ecological sustainability, and everything else we landscape architects are in this for. Best to separate programming from design? Hardly. It depends on the skill level and integrity of the landscape architect.

DAVID W. BARTSCH, ASLA
Boston

FRED NEEDS TO SPEND MORE TIME around real designers, as it appears that he sees design as a function of drafting his "vision." Program cannot be separated from the design process, as designers must understand program from the perspective of the end users, not some third party that interprets the user's needs. Many programs are revised and adjusted after preliminary design reveals the reality of site limitations/opportunities and budgets. Is the "programmer" going to act as third-party middleman throughout the design development? Not on my projects.

Having a facilitator to help communicate with a community and organize the programming process can be useful. Anything to make a program more complete can only be helpful in producing good design. Decapitation of the program from the designer's role is foolish.

RICHARD W. GIBNEY, ASLA
Wading River, New York

VISION IS the idea or perception of what the client wants the site to look like or how it should function. Programming encompasses the elements that are a part of the vision. Correct me if I'm wrong, but the "vision" usually comes from the client with the landscape architect guiding and contributing to the vision.

Whether the designer or a third party is doing the programming it should be a cooperative endeavor between the client and the designer/programmer, whether this is one party or two.

KATHY ROBERT, ASSOCIATE ASLA
Boise, Idaho

Correction

THANK YOU for providing an insightful article about the wellness garden at the Arizona Cancer Center Clinic at University Medical Center North ("Healing with Nature," November). This project benefits from passive rainwater harvesting and diverting of air-conditioning condensate to the landscape. Unfortunately, during fact sharing with the author, the storage tank and graywater harvesting reference was mistakenly taken from an excerpt for another Tucson project located on the University of Arizona campus. Thank you for the opportunity to clarify this mishap with your readers.

TODD M. BRIGGS
Ten Eyck Landscape Architects Inc.
Phoenix

RIPRAP

Seven LED-powered vessels, *below*, have been installed around Dandenong, outside Melbourne in Australia. The designers chose unexpected locations such as alleyways, *here*, to give viewers a sense of "discovering hidden jewels."

COURTESY MARK WILSON

JEWEL TONES

Landscape Architects LED by Example

Installation bathes streets—and alleys—in a colorful glow.

ARCHITECT JAMES WINES coined the term "plop art" in 1969, back when public art was seen as an extension of museum walls rather than an opportunity to engage with communities and sites. Fortunately, as art has evolved, so has its purpose within public spaces. But does making art more context sensitive risk rendering it merely decorative? *Vessels of Light,* by Melbourne landscape architecture firm Sinatra Murphy, challenges this notion.

The installation, completed in July 2007, is in the suburb of Dandenong, 20 miles southeast of Melbourne. This is one of the most culturally diverse regions in Australia, with more than half its residents born overseas. Weekly cultural tours run by the city take visitors to precincts such as Little India and Afghan Bazaar. Downtown streets feature colorful storefronts advertising Ghanaian

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attire, Thai and Chinese restaurants, even an all-in-one Indian/Pakistani/Afghani grocery store.

Nestled within this mix are seven "vessels" mounted at elevated—and unexpected—positions around the city: the facade of a parking garage, entries to laneways (alleys), and above storefronts. Each piece consists of more than 240 brilliantly colored discs threaded over an acrylic core, reaching a height of nearly seven feet and weighing close to a ton. An LED is embedded within each vessel, allowing the eye-popping color of the artworks to be sustained during the night.

Sinatra Murphy focused on capturing and containing light as a way to transform people's experiences of different spaces within the downtown. "Placing the pieces within areas like the grunge of the laneways creates an element of surprise," says principal Phin Murphy. "Finding them is like discovering hidden jewels."

The shapes of the vessels were influenced by exotic containers such as Turkish perfume bottles and Vietnamese candle boxes, while colors were chosen based on the national flags of countries represented by the population. The designers used acrylic because it's highly reactive to natural and artificial ambient light.

"I like them," says Abdi Abdillahi, whose tailoring business is located near one installation. "I don't know what they are for, but they are nice." While the LEDs do provide the vessels with a soft luminescent glow at night, it still isn't quite enough to make all pedestrians feel safe going down some of the laneways. "The vessels blend in well with the street, but I'm a bit uncertain about their placement," says Ofa Moala, a local resident. "People just don't use the alleys, especially at night."

Whether or not the vessels are making the city safer, they are making it more dynamic. Rather than delineating boundaries of where public art ends and buildings begin, *Vessels* manages to use a common denominator—light—to merge building and sculpture into an experience of their own.

—GWENETH NEWMAN LEIGH, INTERNATIONAL ASLA

MEAL WHEELS

Picking Up on the Kitchen Garden Trend

Urban farming hits the road in Brooklyn.

COURTESY WICKED DELICATE

WHAT DO YOU GET when you combine time-lapse photography, an inherited pickup truck, and some free green roof materials? A new kind of planting bed: Truck Farm, a tiny Brooklyn community-supported agriculture program (CSA).

The idea sprang from a desire to grow food in the city. Ian Cheney and Curt Ellis are cofounders of production company Wicked Delicate and are actively working toward making the world a more sustainable place through writing, film, and public speaking. Their portfolio covers topics from light pollution to agricultural policy in a style that shows they are activists with a sense of humor. Through film, they have tackled big issues like America's corn addiction and the resulting environmental impact. Cheney and Ellis are currently working on a snappy documentary about Truck Farm.

It started with some donated green roof components. Cheney and Ellis outfitted the truck bed with a drainage mat and root barrier. Next, they added six to eight inches of GaiaSoil, a growing medium developed by a local nonprofit, and a few inches of topsoil. Seeds were sown and donated red wiggler worms were added. The entire process was caught on film, demonstrating that urban farming is possible, even in something as unexpected as a truck.

The CSA now has about 20 members. "The harvest is as irregular as Truck Farm itself," says Cheney. But Truck Farm started providing good eats in June and continued to blossom through the growing season. The harvest included herbs, greens, tomatoes, peppers, and broccoli. Cheney and Ellis hope to continue harvesting by adding a "covered wagon-style greenhouse" to the truck bed. Having learned from the experience, Cheney says, "It took planting my truck bed to become a good farmer."

Excerpts from the film and CSA information are available at *www.wickedelicate.com.*

—NICOLE NEDER, ASSOCIATE ASLA

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Ten trees and 20 chairs made their way around San Francisco's Mission District, as the first Forest on Foot celebrated a series of ad hoc temporary green spaces.

TREE TREK

Urban Forestry, Uprooted

In San Francisco, foliage takes a hike.

IN DOWNTOWN San Francisco, metropolitan meanderers recently navigated a unique intersection of nature and commerce, as a stand of Mexican-inflected jacaranda trees went mobile through the Mission District. Dubbed "Forest on Foot," the itinerant green space made a tour of various urban hot spots, including a lunchtime stopover at a local eatery and a spontaneous reading outside a popular bookstore. NoCal to the core, the entire undertaking was human powered.

Forest on Foot has its roots in an undertaking conceived for London's 2008 Festival of Architecture by James Munden with San Francisco's Interstice Architects. As enacted in the New World, Forest on Foot was a complement to Park(ing) Day 2009.

Park(ing) Day (see "Riprap," *Landscape Architecture,* January 2009) is a guerrilla event, born in San Francisco in 2005 and now observed in more than 65 cities worldwide. Participants explore alternative uses of that most humble—and affordable—bit of urban real estate, the metered parking space.

Interstice has fielded increasingly ambitious—but typically static—contributions since 2006. This year, the multidisciplinary practice decided to take its show on the road. "We wanted to do something mobile," says Interstice principal Andrew Dunbar. "We wanted to engage different aspects of the relationship between public space and the adjacent private spaces."

Although Munden fabricated a device that made moving the installation a bit easier, the project might have ground to a halt without a bit of spontaneously donated elbow grease: At each stop, enthused bystanders became active participants. "We had 10 trees and 20 chairs being moved around," Munden recalls. "We needed at least two people per tree, but on the day, we didn't quite have 20. People on the street knew nothing about what we were doing, but they started helping out. It straightaway proved a good way of involving people in public space."

Looking forward, Dunbar envisions taking Forest on Foot to a broader audience, though not without a passing nod to modern technology. "I think we can go further next year," he muses, "maybe advance on the mayor's office." But he concedes that wheels might help. "I think wheels are a very good invention."

—JOSHUA GRAY

COURTESY INTERSTICE ARCHITECTS. TOP AND CENTER: COURTESY WENNERSTROM COMMUNICATIONS. BOTTOM

GARDEN AID

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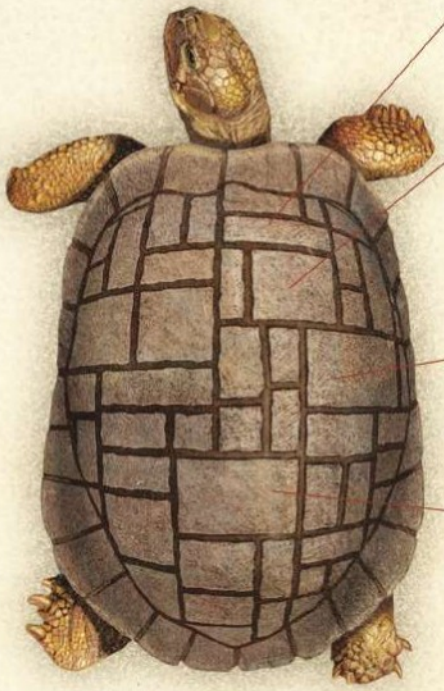

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Recycled Content (1 point)	Recycled Content (Credit 4.1 +1 pt.)	Regional Materials (1 point)	Regional Materials (Credit 5.1 +1 pt.)	Stormwater Design: Quality Control (1 point)	Stormwater Design: Quality Control (1 point)	Heat Island Effect (1 point)

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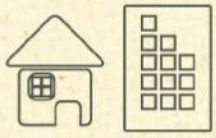

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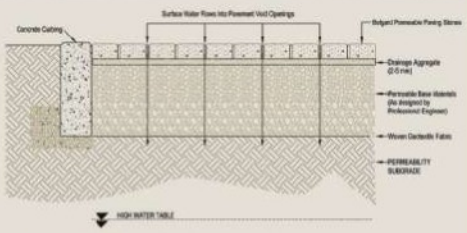

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LEAVING AN OLYMPICS LEGACY

Landscape architects are transforming Vancouver for this month's Winter Games and beyond.

By Tim Newcomb

COME FEBRUARY 2010, the world will celebrate athletics during the Winter Olympics in Vancouver, British Columbia. But the landscape architects behind five new Olympics venues in and around Vancouver had more important things in mind: celebrating local use and Vancouver's natural environment.

While some conjure visions of snow when they think Winter Olympics, the Vancouver venues are really about rain (don't worry, Whistler, the mountain town two hours north of Vancouver where the skiing and sledding events will be held, will provide plenty of snow). Water encompasses Vancouver. From being situated along the Pacific Ocean's Strait of Georgia to the variety of inlets, bays, harbors, and rivers that the city is tucked among, it isn't hard to find waterfront property in Canada's third-largest city. In fact, three of the new Olympic sites sit on reclaimed waterfront.

As a contrast to the blue of the water, the city prides itself on being green in two different ways. Not only are stretches of green parks and trees prominent throughout the region, but the city also has the strictest green building codes in North America.

The view from atop a massive six-acre living roof on the new Vancouver, British Columbia, convention center, *left,* looks over a new plaza and down to a waterfront park and seawall. The roof stands out among downtown Vancouver's skyscrapers, *above.* Expect images such as these to be popular shots during the February 2010 Vancouver Winter Olympics.

In keeping with the spirit of sustainability, Olympics venues—unlike in Beijing—are about restraint and post-games use. Whether using current structures as is, remodeling old ones, or even building new sites, Vancouver isn't making a splashy entry onto the world stage. Unlike the "Ice Cube," the gargantuan Forest Park (see "Olympic Hopeful," *Landscape Architecture,* March 2008), and other Beijing wow projects, Vancouver's most iconic new location, the new Vancouver Convention Centre at Coal Harbour, was in the works far before the Olympics even materialized. It was added to the Olympics repertoire as the main media center, giving the province-owned structure and its six-acre green roof—the largest in North America outside of Ford's River Rouge plant—world visibility.

Along with the new convention center, which the public is already using, an entirely new community is being built at the old industrial Southeast False Creek waterfront site. Its initial purpose will be to function as the Vancouver Olympic Village, but it will become a new neighborhood after the games, with the athletes' condominiums being privately sold and new public buildings opened.

Organizers are using three structures for sports: BC Place for ceremonies, GM Place for hockey and figure skating, and Pacific Coliseum for short-track speed skating. Just two sites were built and one remodeled specifically for sports events in Vancouver (though there are additional mountain sites in the Whistler area). These five fresh projects (the village, the Vancouver Convention Centre, and the three sporting venues) are the work of four different, primarily local landscape architecture firms.

The new Richmond Olympic Oval, where long-track speed skating will take place, is owned by the city of Richmond south of Vancouver and is possibly the most Olympics-centric of all venues. While it will host speed skating events for years to come, it is also a community center complete with a new waterfront park.

The Vancouver Olympic Centre, which will host curling, was conceptualized before the Olympics but only materialized because of the games. The city-owned site inside a park will morph into a community center, library, day care, and aquatic center post-games. A remodeled Thunderbird Arena for hockey at the University of British Columbia expands community and university recreation and event opportunities.

PWL PARTNERSHIP. OPPOSITE: THE VANCOUVER CONVENTION CENTRE. THIS PAGE

Habitat Island, *below,* juts out from the shoreline in downtown Vancouver's Southeast False Creek neighborhood, which will serve as the athletes' village during the games. Stepping-stones, *above,* connect the island to the mainland.

Because the event organizers and the designers of the outdoor spaces envisioned postgame community use, the linking themes between the sites are few, alive mainly because of their shared purpose—the games. This is fortunate for the people of Vancouver, because the designs weren't created just as showpieces for the world, but for community use. From people dipping their feet in the water at the new interactive shoreline at Southeast False Creek to people clamoring (60,000 on opening weekend) to get a glimpse of the new convention center green roof, the new landscapes provide nature-based opportunities for the local population. After all, natural surroundings are what living in Vancouver is all about—even after the games are long gone.

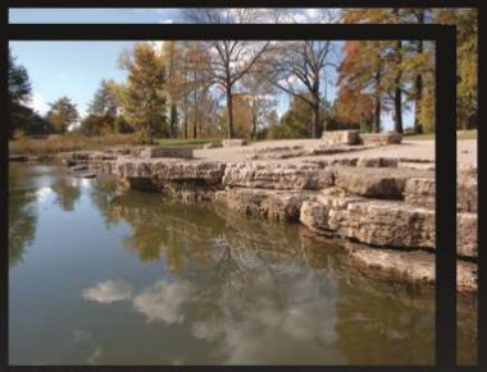
Vancouver Olympic Village at Southeast False Creek

Vancouver's last untouched industrial waterfront received a makeover fit for the world's Olympic athletes, but it was all done with the locals in mind. The 80-acre site (50 acres of which are publicly owned, including 26 acres of open space) is being turned into a new waterfront community complete with condominiums, a park, a community center, a seawall, a preserved historic building, and a new island.

While planning and design work have been ongoing for more than six years and the bulk of the city's 50 acres has been constructed for the Olympic Village—there is still a 30-acre section left for future development—the summer of 2009 marked Vancouver's first use of the new waterfront space. Other portions won't be open to the public until after the Olympics.

Margot Long, ASLA, a partner in Vancouver's PWL Partnership Landscape Architects, designed the public landscape, including the new shoreline. Vancouver requires any construction project to replace lost shoreline by a margin of two to one. And since unsightly and fragmented inlets were covered over at the old industrial site, the project team had to figure out a way to create more shoreline. Hence, the landscape architects designed a brand-new island off the shore of the development. While technically a peninsula (the city required stepping-stones above the water line as a way off the site), the half-acre Habitat Island is still a piece of natural serenity in an urban area. Old Douglas fir snags beckon birds, logs on the beach provide a place for people to rest, and pathways meander through native vegetation. It is one of the only places in Vancouver where the tidal change can be seen. Herring have even returned to the False Creek Inlet for the first time in 80 years.

PWL PARTNERSHIP



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How to manage Habitat Island remains a mystery, since dogs and a swell of people on the space could easily trample down what has been created. "We will see if it can be self-managed," Long says. "It will be a huge headache for the (Vancouver) Parks Board." If the public can't manage it, closure may be the only future option.

Just a few steps from the island sits Hinge Park, connecting two of the city's three themes for the area (rail yard, shipyard, and work yard). The park spans—literally, with a bridge reminiscent of an old gangway—open space to a future elementary school site and condominium high-rises that will house the athletes. Through the greenspace runs a stormwater-cleansing wetland. Instead of burying water with piping, water was brought into the park, serving as an educational tool. In fact, old pipes left on the former city work yard site have been turned into playground equipment. Once full, the creek spills into the False Creek saltwater.

The 650-meter seawall creates separate paths for pedestrians and bikers—as is the norm in Vancouver—and ties in subtle historical elements of the three themes. Long says she would have liked to vary the width of the pathway, but city requirements wouldn't allow it. She did add planting strips between the paths, creating visual breaks. The shipyard area features large metal dock ties along the seawall, while timber is a key feature in the rail yards. Even historic lumber mill markers are woven into the seawall. The robust character of the space features workaday materials such as iron, timber, and rough granite.

Large granite steps below the seawall are designed to be reminiscent of ballast from ships and allow visitors to interact with the water, a new concept for Vancouver's sea-

The Southeast False Creek Neighborhood was built on the last undeveloped industrial waterfront area in Vancouver. A new shoreline, including granite steps, *left,* that allow residents to interact with the water was created and a canoe-shaped bridge, *top,* was placed over a restored inlet. The site connects to the rest of downtown Vancouver, including the city's hard-to-miss Science World (far left). Because stormwater runoff at Southeast False Creek is being treated out in the open with a new wetland area, *opposite,* old stormwater piping was turned into a bridge and play equipment.

PWL PARTNERSHIP

walls. Specially designed oversized lounge chairs and swiveling metal chairs provide an artistic, urban flair. Solar compacting trash cans with recycling bins add sustainability. A prominent inlet was expanded with a canoe-shaped metal bridge spanning the water. The enclosed tidal amphitheater with granite steps provides a place for people to sunbathe and watch floating exhibits. And, of course, stormwater runnels are featured throughout.

The athlete's plaza, designed by Chris Phillips, ASLA, partner in Vancouver's Phillips Farevaag Smallenberg, sits between the seawall and the historic salt building—the only old structure to remain. Phillips says the space is about telling a narrative story of the site's history. As a spot for large gatherings, the open space is in the shape of a ship, and the ribs lining the site are reminiscent of that theme. The area will serve as the athletes' front door during the games and as a community plaza post-games.

Developer Millennium Water built the village residences for sale as private condominiums. They feature green roofs and private courtyards full of water features created by Peter Kreuk, ASLA, and Jennifer Stamp, ASLA, of Vancouver's Durante Kreuk landscape architects. Stamp says the Olympics' goal of sustainability plays in with the development's social sustainability goals by having "backyard" courtyards that promote urban agriculture with personal garden plots and fruit-bearing plants.

As for the athletes, there actually wasn't much thought put into them. "It was all about the end user," says Kreuk.

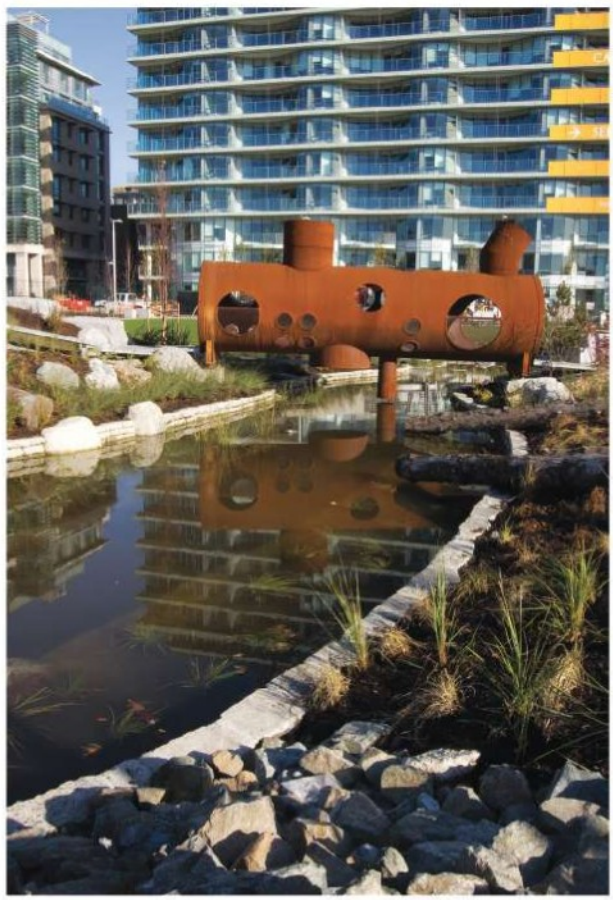
The entire site, which pushes the boundaries for the city with its sustainable features, really is a major experiment, admits Long. From the new-look shoreline to solar-powered trash cans and recycling bins, the city isn't sure how the sustainable features will work. So far, the site has been a success. Even without residents in the neighboring buildings, the place was packed last summer. "It is such a change from the rest of the seawall," Long says.

> The entire Olympic Village site, which pushes boundaries with its sustainable features, really is a major experiment.

"There is an ability for people to get down to the water. It is a different experience. The city wants to take the lessons here into different places." She admits that seeing so many kids using the site has been rewarding. "All of our projects should be filled with people using the space," she says. Well, everybody but the skateboarders, that is. Rivets throughout the project, which appear shiplike, are actually skateboard deterrents.

Along with the island, the city will have to deal with maintenance costs all along the seawall. There wasn't enough money to properly reinforce the site, which sits entirely on fill, so all the pavers and materials are created for easy change out. That design solution may also become a maintenance nightmare. But for now, judging by the site's usage, potential nightmares give way to the realized dream of reclaiming an old, unused waterfront.

The entire area's historic tie-ins, the use of reclaimed materials from on site (boardwalk walls are old city sidewalk concrete), and the successful connection of the last undeveloped waterfront in the downtown core to the adjacent neighborhoods make the seawall the highlight of the design. Opportunities to interact with water off the granite steps and to celebrate natural elements on Habitat Island are an exciting new way to develop shoreline in Vancouver. How well the interior of the site, including Hinge Park and the rooftop greenspaces, is embraced by neighborhood residents won't be known, of course, until after the Olympics, but right now the site is all about the new seawall. If the city can keep the pedestrian-centered stretch looking clean and natural, giving city dwellers the chance to touch nature with their toes will be the real legacy of the new Olympics community.



PWL PARTNERSHIP

Richmond Olympic Oval

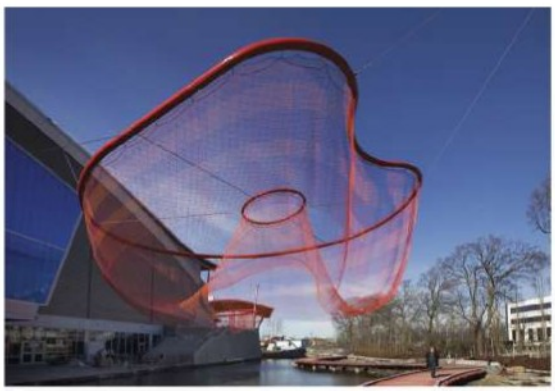
All the talk about the new Richmond Olympic Oval centers on its size. A massive, six-and-a-half-acre roof covers a new community center and speed skating building along the Fraser River on unused city property. The building, which is expected to become the centerpiece of new urban economic development, is tucked between the middle arm of the Fraser River and adjacent roads. That gave landscape architect Chris Phillips just two sides of a site to play with. He designed a new waterfront park, Richmond Spirit Square, on the north side and an extension of a seawall trail and a new stormwater bioremediation pond to the east.

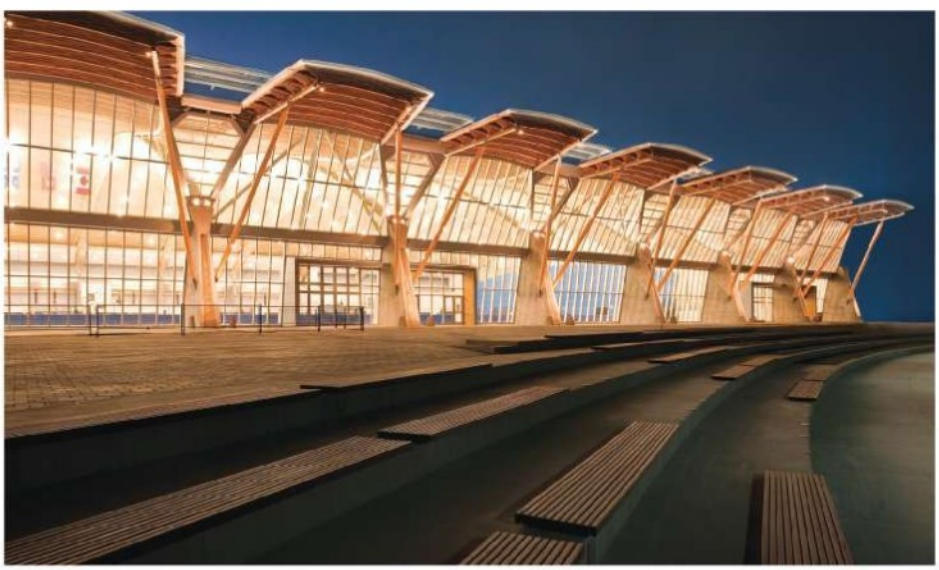
Before he could begin, Phillips needed to develop a plan to deal

with the runoff from a roof that is several city blocks long. Celebrating water, therefore, became a theme and led to the artistic, salmon-centric runnels, designed by artist Susan Point, that bring water off the roof and across pedestrian walkways to open wetlands. Even a decorative waterfall uses runoff. "We wanted to reveal the stormwater experience of conveyance," Phillips notes.

To create a public realm, the wetland area—which naturally treats the stormwater before it spills into a neighboring canal—becomes the focus of the landscape directly surrounding the structure. A gravel path and a snaking red bridge reminiscent of Vancouver's popular Asian gardens bring pedestrians through the site and give them a place to pause. Two massive red nets created by Boston artist Janet Echelman hover over the wetland and tie together Richmond's strong Asian influence and the historic fishing culture while providing large-scale art to visually offset the 512,000-square-foot oval.

Richmond Spirit Square waterfront park was raised up to sea level on not-so-sustainable Styrofoam. The space was left open, per the city's request, to serve as a large gathering spot and to meet the staging needs of Olympics organizers. A drainage system under the lawn pipes runoff back to the wetlands.





Phillips says that a shrinking exterior improvements budget really limited him. What started as $11 million of the $178 million overall budget dwindled to $6 million, leaving little for Phillips after roadways were built. He worked hard to get budgeted art money moved outside to augment his landscape, which is seen in Echelman's work.

More than any other landscape architect designing Olympics venues, Phillips says the games were always in play during design. Large circular steps on the waterfront are a link to the skating lines inside the oval. That same pattern is tied into benches, although the link is mostly subtle.

The real power of this site isn't at the waterfront park (though who would complain about an old city lot becoming a park?), but on the wetland bridge, with art reminiscent of Olympic rings above and the massive building—with Olympic rings on the side—directly to the side. It is there that visitors get the theme of sustainability from the wetland and a feeling for the scope of the Olympics. But even with the beauty of the wetland area, if people aren't drawn to the waterfront, they will have no reason to wander by the wetlands. How much the public is pulled in to use the new waterfront park and how much the city of Richmond uses the programmable space will ultimately make or break the oval site.

A snaking red bridge over a stormwater-cleansing wetland, *top*, at the Richmond Olympic Oval ties to the city's Asian heritage. Metal and net artworks by sculptor Janet Echelman float above the wetland, *center*. Benches are set into a new waterfront park at the Richmond Olympic Oval, *left*. Runnels between the building roof overhangs move water from the 6.5-acre roof to the adjoining wetland.

COURTESY PHILLIPS FAREVAAG SMALLENBERG. TOP: PETER VANDERWARKER. CENTER: CANNON DESIGN/HUBERT KANG PHOTOGRAPHY. BOTTOM

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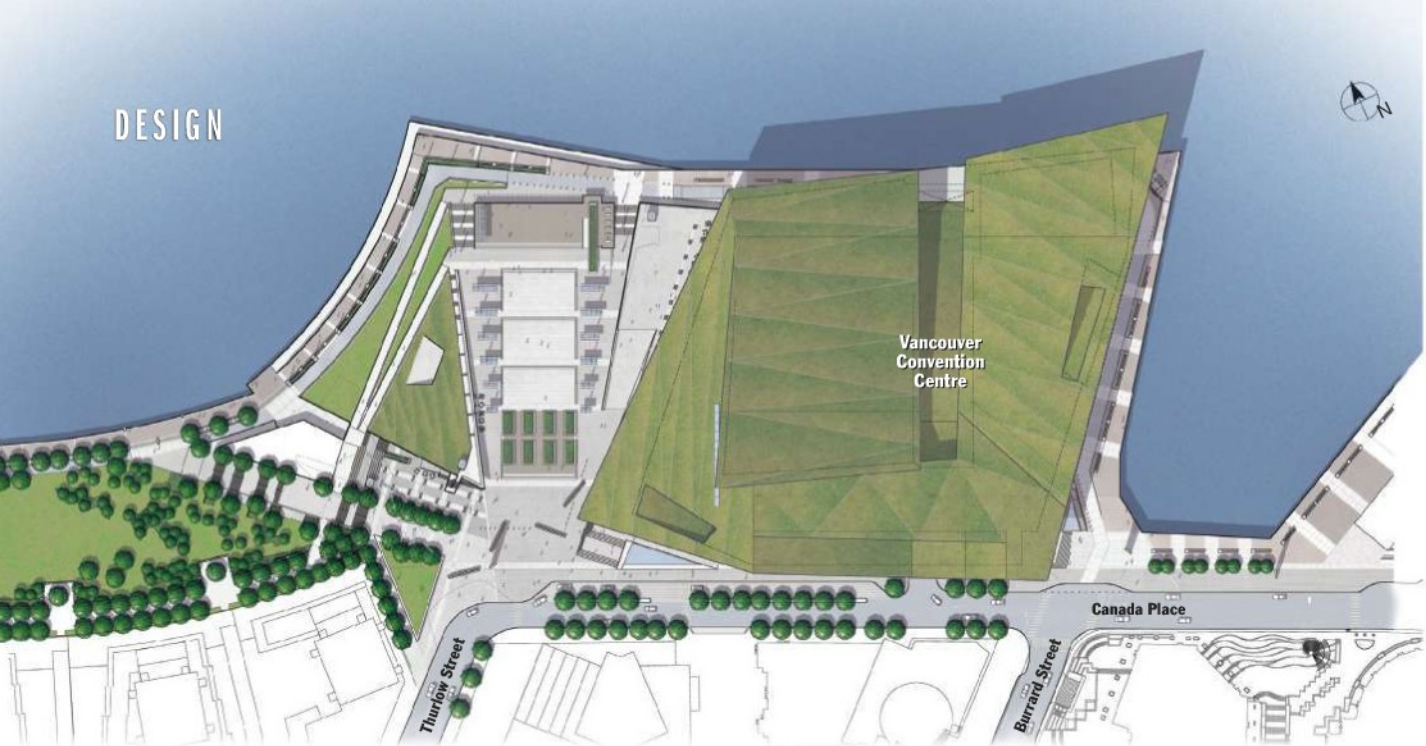


Vancouver Convention Centre

In what has become the most iconic of Vancouver's new landscapes, the six-acre green roof on the new Vancouver Convention Centre was the result of PWL Partnership's Bruce Hemstock's vision of creating a public educational tool.

The roof is the culmination of a roughly 1.2-mile corridor of waterfront greenspace, with well-loved Stanley Park on one end, Harbour Green park in the middle, and new vegetation rolling up onto the roof of the convention center on the other end. The center also ties the other waterfront parks to the downtown core, but a 40-foot elevation gain between the old park and new center required ingenuity. That is actually where the green roof came in. The roof stairsteps up over a restaurant and two levels of the center, metaphorically and practically extending the green carpet of the park onto the building. A pedestrian walkway allows visitors to meander through the lower portion of the roof, which is covered in Pacific Northwest coastal grasses and includes interpretive signs.

The Vancouver Convention Centre's living roof, *below*, is meant to be simply an extension of Harbour Green park, which was already adjacent to the site. The new convention center site, *above*, required a seawall to be created. An artificial reef was installed and is already attracting marine life that is being studied by area marine biologists.

PWL PARTNERSHIP

A new plaza area at the convention center, *below,* gives visitors water, island, and mountain views. Small planters were placed in plaza areas, *left,* since much of the site is on top of a parking garage, forcing strict load restrictions. When up on the grass-filled living roof of the convention center, *bottom,* visitors can almost forget they are downtown in Canada's second-largest city.

The roof holds 5,000 cubic meters of growing medium and doesn't exceed eight inches in depth, due to load requirements. The roof uses runnels to collect rainwater for reuse inside the center. Because the ultimately $890 million (Canadian) convention center project had doubled in cost during the course of construction, it was lambasted by the public for being a white elephant, enhancing the pressure for Hemstock to create something special. To appease the public, a mandate from the province required the use of local materials, even though those weren't always the design or cost choices Hemstock wanted to make and could create maintenance issues in the future.

When the center opened, the architectural community was skeptical of the building and even Hemstock's roof was met with criticism. Roof plantings weren't prominent at the start, and the plants didn't take off until 2009, when the grass reached Hemstock's knee. However, as the roof grew into its own, the public and critical acclaim shifted.

"We took a lot of criticism for [the center] not being dynamic enough when it opened," Hemstock says. "Then we had this amazing shift where all of these people who said it wasn't iconic enough did an about-face." He credits the roof plantings with the shift.

While the roof gets all the press, it was the integration of other plazas on the site, also designed as part of this renovation by PWL, that was the most challenging, Hemstock says. He worked with the center's architects to create a grand staircase that allows pedestrians to travel up the grade.

This creates a new view corridor and changes the setting from park to urban. "We wanted to make sure this did not become a back door," Hemstock says. The split granite of the park wall shifts to the polished granite of the convention center district, illustrating the change. The park's garden was extended up a grassy embankment next to the stairs, with a variety of maple trees, so tourists can literally take home souvenir leaves that fall.

The plaza areas adjacent to the streets posed their own set of difficulties. Since directly under the public space sits an underground biking tunnel and parking garage, load limits were a factor. Small gardens, instead of heavy trees, give the space life using textures, colors, flowers, and grasses. At the one spot where weight was allowed, on

PWL PARTNERSHIP

The Vancouver Olympic Centre, a curling venue, connects to a new community aquatic center, *left,* in one new facility. These connected facilities needed to seamlessly tie into the existing park and provide plenty of access space, *below.* Landscape architects flowed the existing sports fields and pedestrian access space right up to the new building in an effort to not infringe on the already existing public green space.

top of the garage's building columns, Hemstock placed large light posts to delineate the district and its widened sidewalks. Runnels encircle the posts, showing off the flow of water.

To make three acres feel intimate, Hemstock broke the plaza into three different connected areas with grading changes. Sight lines point visitors to views of the mountains and harbor, creating spaces that aren't just boxed-in courtyards.

An extension of the seawall pedestrian and biking path—with completion planned for after the Olympics—will curve around the center on an artificial waterfront and gradually rise in elevation before connecting to Vancouver's expansive biking corridors on the far side of the site.

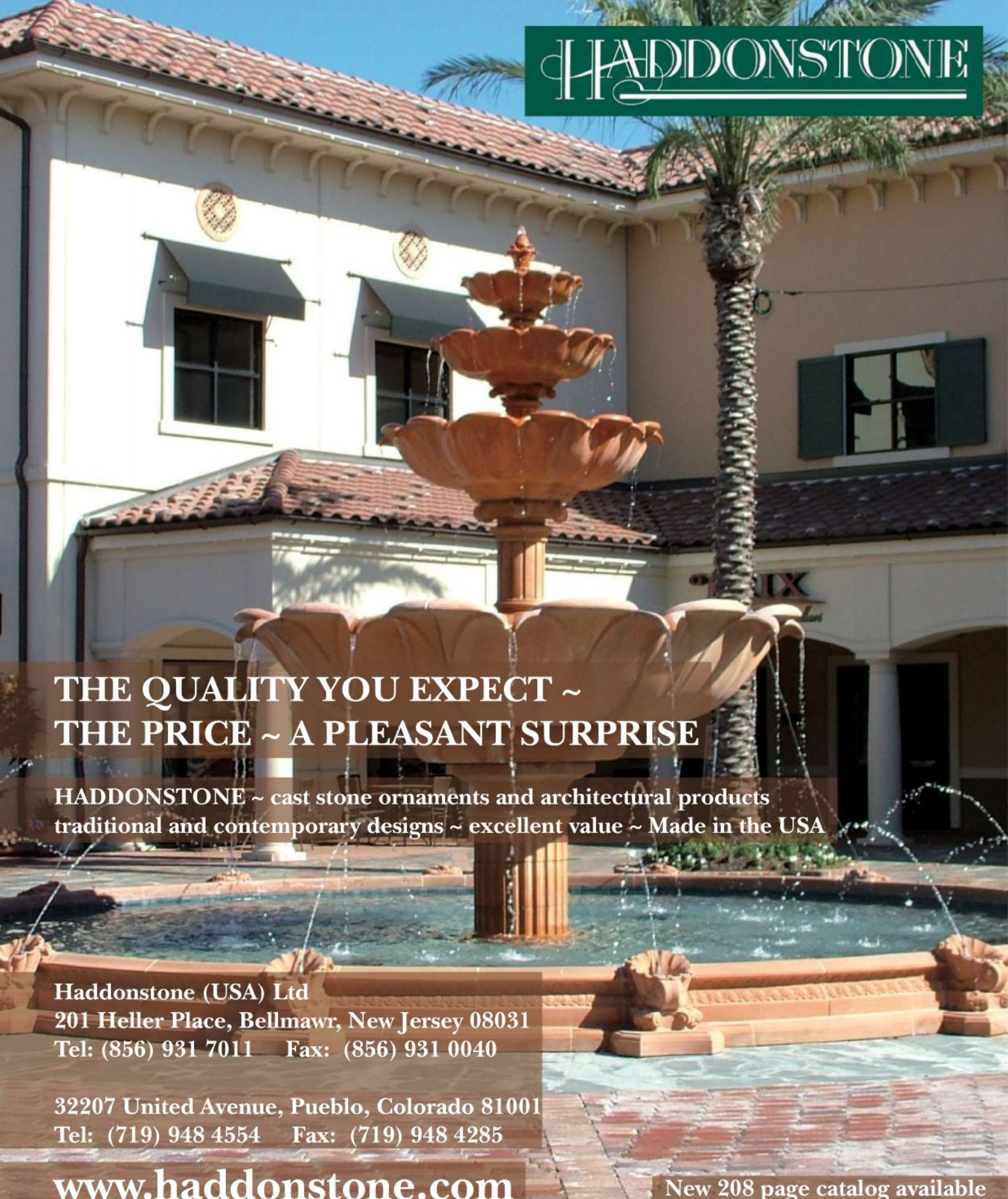
While it remains to be seen once the construction is done if the site's flow works as planned and if the plazas actually become Hemstock's dream of intimate locations, the exterior space does provide the downtown community and convention center guests with a new gathering location with scenic views. Ample open space houses groups, and enough plaza space—with benches—is tucked up against the center to invite pedestrians to sit and take in the harbor activity while feeling separated from the bustle of the sidewalks. The convention center is a link between two downtown worlds, but it is also a link with enough reasons to draw users in.

And about the Olympics? It didn't change the design, just added pressure—not that there wasn't enough of that already with a $14 million landscape that may become a popular TV shot during the games. It now falls to the roof to convey Vancouver's sustainable image during the Olympics to the rest of the world.

COURTESY HUGHES CONDON MARLER ARCHITECTS

Vancouver Olympic Centre

Tucking a brand-new $88 million Olympics curling arena, community hub, and aquatic center into an existing park without taking up any green space is a difficult chore. The entire multiuse building that opened in 2009 after two years of construction sits on a former gravel parking lot in Hillcrest Park, nestled just feet from the historic Nat Bailey baseball stadium and wedged between community baseball and soccer fields. While PWL's Margot Long says the location wasn't her top choice because of space constraints, politically it was what the city of Vancouver opted for because it kept the arena away from nearby residences.



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The indigenous landscape is minimal at best, to keep the building meshed with the adjacent open space and maintenance low for the city, all while ensuring unencumbered access to the main entrance. After all, the site will also host a day care and library once the games leave town. Small rain gardens won't go in until after the games, to leave room for Olympic staging needs.

Long designed with the idea that the site would be used as a community ice rink. "We wanted to keep it simple and keep it open for all the kids in hockey gear," she says.

By forcing the landscape to take a back seat, the structure was able to squeeze onto the old parking lot footprint, making it nearly impossible to tell where the soccer fields stop and the new center landscape starts. If creating an open walkway was the most important part of the exterior work, Long did her part. After all, you can't tell it was just gravel before construction started, and the area residents didn't lose a single blade of their precious park grass or have a building plopped on an open field. Sometimes restraint is the most sustainable option for the end user.

The landscape design at Thunderbird Arena, a hockey venue on the University of British Columbia campus, was significantly reduced. What remains is a simple entrance with bermed earth to soften the building, *above,* and circular plantings, *below,* reminiscent of the pucks and face-off circles on the sheets of ice inside the arena.

Thunderbird Arena

With one refurbished ice rink and two new ones, the 141,000-square-foot Thunderbird Arena on the campus of the University of British Columbia is about Olympic hockey and postgame campus events. The completely remodeled $47.8 million arena is situated within the bustle of the urban campus. The main goal of the two-year project, completed in 2008, was to improve pedestrian connectivity on campus, according to Ken Larsson of Vancouver's Sharp & Diamond Landscape Architecture, all while balancing the space's future uses with Olympics needs.

"It was meant as a multisport legacy facility, but the primary goal was always to be a community recreation facility," Larsson says. "It has to be easily approachable and functional."

Keeping the area free of immediate parking—a parking ramp is situated across the street—allowed Larsson to create multiple accessibility avenues. New pedestrian paths help connect the site to the campus and will help move Olympic-size crowds as well as visitors and recreational hockey players after the games. Tree screens further remove visitors from nearby traffic.

The design changed throughout the project, as Larsson worked to keep costs down. The expanding footprint of the ice arena and the desire to screen the building's entrance eliminated the original grass and tree plantings envisioned for the site. Instead, he used displaced earth to build up the landscape in front of the structure. This provides a backdrop for Olympics photo opportunities, creates a natural feel, and minimizes trucking costs.

A row of oaks and maples was retained, while Larsson exploited the Pacific Northwest palette in his additions, keeping a focus on winter interest. Large trees match the scale of the structure.

The plaza's floor pattern plays off a sheet of ice. The center of that floor contains a circle, symbolic of a hockey puck. Three hornbeam trees are inside the circle. Materials include large pavers in grays and charcoals and random darker stripes. A southside festival court has terraced seating, creating informal and formal space, ideal for a campus setting.

The remodel gives an old arena a more natural feel near the building and provides the university with better connectivity around the site. The subtle landscape and increased number of pedestrian walkways and plazas allow the old site to better mesh with the campus community, all while providing more space for gatherings. If you want "wow," walk the Convention Centre green roof (or go to Beijing), but if you're more interested in functionality, subtlety, and continued use, Thunderbird Arena, and in fact the majority of Vancouver's Olympic venues, has it. LAM

Tim Newcomb is a newspaper editor and freelance magazine writer living in western Washington.

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2008 ASLA AWARD WINNER

THROUGH THE WOODS

A path becomes the primary feature of a residential landscape in Maine.

By Jane Roy Brown

"BEING SURROUNDED by green feels so right," says Margaret Nomentana, the owner of this three-acre waterfront property in the glacier-scoured lake country of western Maine, where she went to summer camp as a child. Nomentana, an artist, lived in Los Angeles for 20 years, where, she says, "the landscape felt alien to me."

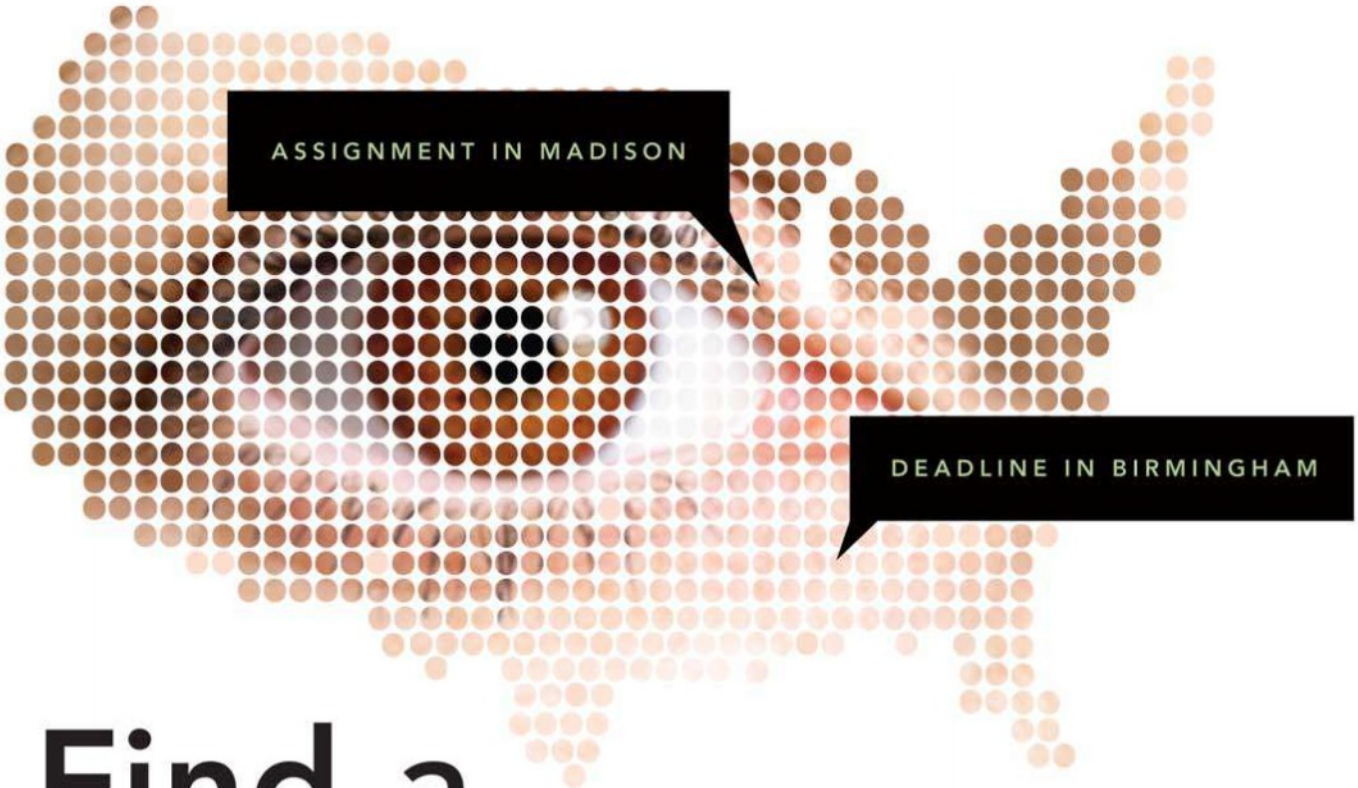
She stands with Jason Siebenmorgen, a landscape architect who worked on the final phase of design for Michael Van Valkenburgh Associates (MVVA), on a steel-capped concrete wall that supports a ramp to the entrance of her house, an asymmetrical composition of stacked volumes set into the landscape. The east end of the 4,450-square-foot building rests atop the slope, abutting the parking area. The building's west end, which tapers to a prow-shaped, open terrace jutting into the woods, perches on slender piers, creating an open-sided space about 12 feet high between the building's underside and the ground.

In addition to linking the landscape to the house, the low concrete wall at the entrance marks the threshold—a word used by the design team—between the sunny gravel parking area in front of the house and the dark, soft forest beyond. From here, a short flight of concrete steps leads to a path that switchbacks down a wooded slope to a quiet lake about 125 feet due west of the house. The threshold is not merely metaphorical: Michael Van Valkenburgh, FASLA, and his team worked closely with the architects—Atlanta-based Mack Scogin Merrill Elam—to signal a transition between the open landscape around the house and the more intimate one behind.

"Around the parking lot, which is surfaced in the granite gravel found in this area, the plantings mimic the arid, fragrant edge of the road," Siebenmorgen explains, referring to the sweet fern, bayberry, blackberries, sumac, and bracken fern planted along the sunlit edges, along with sugar maple, black locust, and young white pine. "Then you step over the threshold into a different moisture gradient, moving through a wetter woodland on a path lined with lush blueberry, hobblebush, and fern." The forest canopy comprises mixed

An informal walking path negotiates a steep slope to a boat dock on a lake.

COURTESY MICHAEL VAN VALKENBURGH ASSOCIATES



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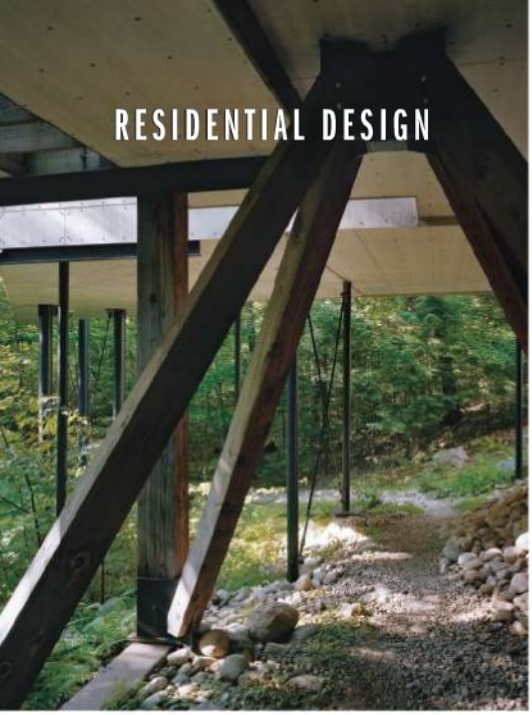


hardwoods with a smattering of hemlock and white pine. Such contrasts—light/dark, dry/moist, hard/soft—are thematic throughout the landscape.

The overhanging west wing of the house straddles a shallow drainage swale that meanders to the lake. The swale was an existing natural feature that traced the course of runoff flowing downhill in snowmelt and heavy rain. Although it was not an official streambed or wetland, the design team placed the house and the path so as not to disturb the established drainage pattern, Siebenmorgen says. Van Valkenburgh's design emphasizes the swale's flowing form and bolsters it against erosion by adding river stones of varied sizes and planting ferns and other low-growing forest species at the edges.

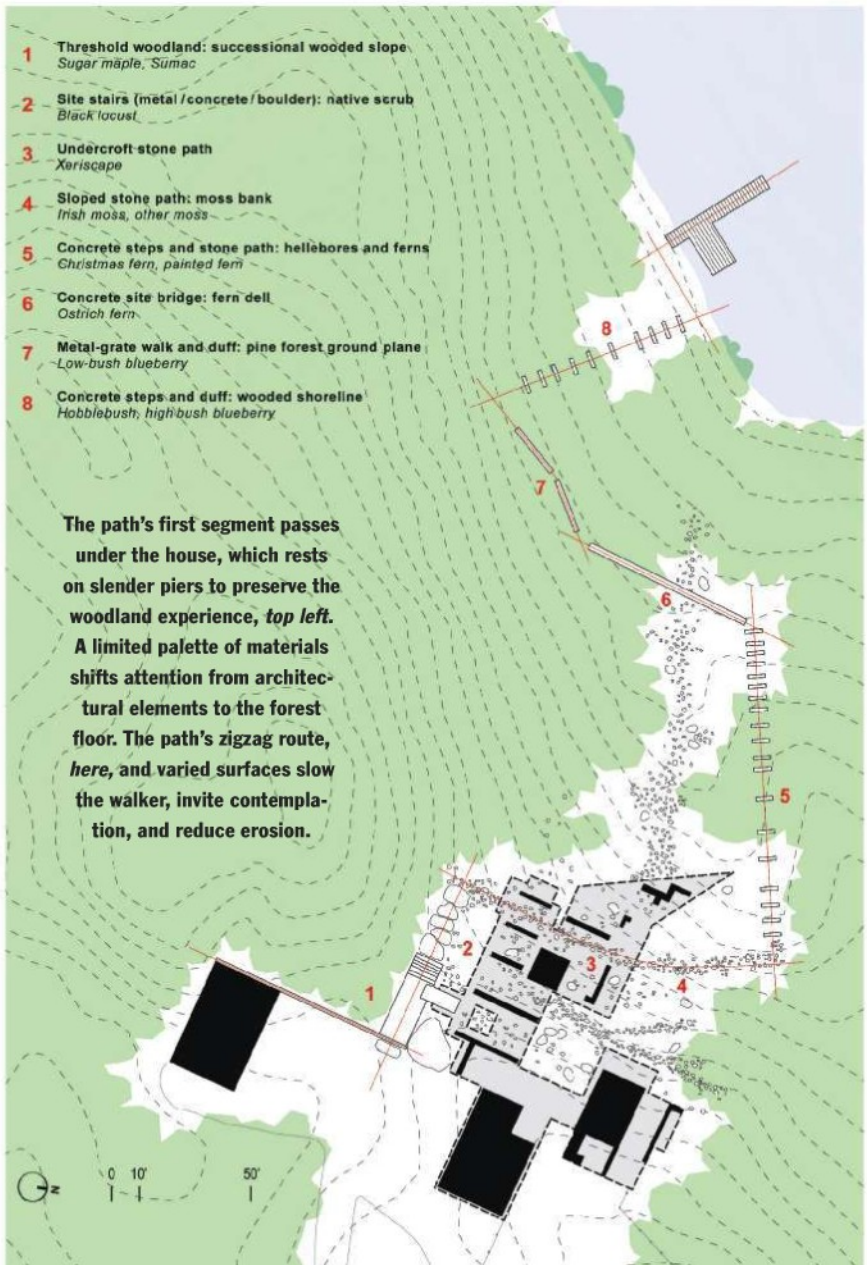
The Passage

The primary feature of Nomentana's landscape is the path itself. That's also the main reason MVVA's design was given an ASLA Residential Design Honor Award in 2008. It would be easy to describe it as a simple trail through an ordinary patch of northeastern forest. The path is only about 600 feet long, although it could have been considerably shorter, beelining downhill like a kid who can't wait to get to the water. But this is a grown-up's path, a chain of discrete experiences marked by abrupt turns and changing materials. Traversing a slope that approaches 3:1 at its steepest, it is as much about slowing the feet to let the senses take in the changing composition of the forest as it is about creating a route to a destination, which is why the design team's working title for this design was "Passage to the Lake." As Nomentana puts it, "I wanted this to be like a walk in the woods, only nicer."

At the threshold, the path proceeds down a short flight of concrete steps to a series of granite stones below the steps, then takes a sharp right (north) to pass beneath the overhanging west wing of the house. The trail surface, a ribbon of pebbles and fist-sized river stones like those on the drainage swale, mimics a dry streambed. Saplings and ferns sprout among the boulders spilling down the

Plant List

Acer pensylvanicum • Striped maple
Acer saccharum • Sugar maple
Comptonia peregrina • Sweet fern
Dennstaedtia punctilobula • Eastern hayscented fern
Lindera benzoin • Northern spicebush
Matteuccia struthiopteris • Ostrich fern
Mitchella repens • Partridgeberry
Polystichum acrostichoides • Christmas fern
Rhus aromatica • Fragrant sumac
Rhus glabra • Smooth sumac
Rhus typhina • Staghorn sumac
Viburnum alnifolium • Hobblebush
Viburnum dentatum • Southern arrowwood
Various native mosses, transplanted from on-site locations



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slope. After emerging from under the house, the pebbly trail crosses a bank of moss and begins a gradual descent before pivoting almost 90 degrees (west) on a granite stepping-stone. From here the trail heads straight downhill in a flight of shallow steps, with each step formed by a bed of packed river gravel retained by a concrete bar about the same width as a railroad tie, which serves as a riser. The designers placed the risers at irregular intervals according to the steepness of the slope, which keeps the walker aware of the topography and the need to pay attention. Low-bush blueberry, mosses, ferns, and wildflowers grow in the dense shade beside the walk.

About halfway down the slope, the path turns about 120 degrees (south) onto a narrow concrete bridge across

The designers mounted two segments of steel grate on pin foundations for minimal disturbance, *left*. Each change in material underfoot, *above* and *below left*, marks a change of direction and character. The concrete bridge, *below*, and step risers were cast in place. The bridge spans a preexisting drainage swale, maintaining the site's hydrological regime.

COURTESY MICHAEL VAN VALKENBURGH ASSOCIATES. TOP LEFT AND BOTTOM RIGHT; BILL REGAN. TOP RIGHT AND BOTTOM LEFT

the shallow swale. The smooth, planklike form, 60 feet in length, creates a pleasing contrast with the organic flow of river stones and ferns a few feet beneath it. At the south end of the bridge, the path continues across the slope on a soft bed of pine needles and duff. Two long, narrow metal grates, aligned end to end at the edge of the slope, define the path and stabilize the foot bed.

The final segment of the trail begins with a sharp turn (northwest) to a full-on view of the lake. Shallow gravel beds, retained with concrete risers, descend to the dock on the rocky lakeshore. A bench on the dock invites the walker to take in a meditative view of the water and the wooded hillside on the western shore, part of the White Mountain National Forest. The grand panoramic view, which has been screened by leaves and tree trunks throughout the walk, is the journey's dazzling reward, yet the enclosing forest and the steady lapping of water keep the mood contemplative.

Design Collaboration

Both Nomentana and Siebenmorgen attest to a collaborative design process between MVVA and the architects. Van Valkenburgh had worked with Mack Scogin Merrill Elam before, and they recommended his firm for the project. "Aesthetically, it was a good fit," says Nomentana. Although she hired the architects first, she says they "were sensitive [to the landscape], and had I chosen a landscape architect first, I probably never would have gotten to MVVA and wouldn't have this wonderful landscape that pleases me a great deal."

The collaboration between architects and landscape architects began with design charrettes, during which the two teams worked out the strong linear forms of the threshold and the bridge, Siebenmorgen explains. The meandering path layout was established early in the design, with some angles echoing those of the irregular, multifaceted building. For instance, the concrete bridge offers a southwesterly view similar to that seen from the flagstone terrace off Nomentana's first-floor living room, 18 feet above the ground.

Before construction, the site was covered in a young forest of hemlock, maple, beech, and birch. The soil here is fragile—coarse,

After a turn in the path, concrete risers descend to the lake through pine duff.

COURTESY MICHAEL VAN VALKENBURGH ASSOCIATES

crumbled granite, covered with a thin layer of humus and forest duff. The small lot didn't allow the architects many options in locating the house, Siebenmorgen acknowledges. Before the excavation, the landscape architects identified some trees that could be saved and replanted. After the house was finished, which took three years, the landscape construction began, starting with what Siebenmorgen calls healing the landscape. "Even though the architects and contractors were very careful," he says, "a significant degree of disturbance is inevitable when building on any wooded, sloping site. Michael [Van Valkenburgh] guided the construction the best he could and then began replacing the native species that had been displaced in the process."

Landscape Construction

In building the path, says Siebenmorgen, "the overall strategy was to insert the constructed elements cleanly into the landscape with as little disturbance as possible." For the bridge and the concrete bars (used as risers on the shallow gravel steps), the construction crew excavated to below frost depth, then formed and cast the concrete elements in place. The design team reused boulders uncovered in the excavation to shore up the slope and to emphasize the curves of path and swale, which intersect at various points.

The design has continued to evolve, requiring small additional interventions. For example, Siebenmorgen says, "Margaret found that she wanted more definition and structure in the section of the path where the grating now is, which was just soft forest duff. The path follows the same route as before, but now the grates give it a defined edge and hold the surface in place."

When the crew installed the two segments of steel grate (each about 20 feet long), they dug a 12-inch-square hole at each end of the grates—four holes in all—

then inserted a pin foundation (a concrete knob about 10 inches in diameter) into each hole. At the base of each knob, four steel pins fan out to grip the soil, resulting in minimal excavation and disturbance.

In terms of planting, the landscape architects supplemented the trees and shrubs salvaged from the original landscape with nursery stock that mimics the native forest species. A beefed-up understory of hobblebush, beech, birch, winterberry, witch hazel, high- and low-bush blueberry, striped maple, and ferns reinforces the slope along the path as well as the swale. Although the planting plan aims to spawn a typical succession of forest species, Siebenmorgen emphasizes that this is not a pure ecological restoration but a "managed succession" that includes aesthetic decisions such as thinning trees and shrubs to maintain a desirable appearance and introducing sugar maple near the parking lot. "It's about the only species you don't find growing in this immediate area," he says. "It's a design intervention to add an intense punch of color in the fall."

> This is a grown-up's path, a chain of discrete experiences marked by abrupt turns and changing materials.

Now, more than eight years later, no other structural changes are planned. Viewed from inside the house, the landscape is an enveloping presence. "From the interior, one looks out at the landscape, which was very important to me—the lake, yes, but the trees and their color and texture too. In the winter you see a lot more of the lake, but it's frozen and white and becomes almost just a continuation of the snow-covered landscape," says Nomentana, who uses the house in all seasons. "This slight intervention has made the landscape much more interesting. During the design process, I began to think a lot about how I felt about landscape, something I hadn't done much before, other than knowing that I missed the green. [That process] made me aware of how important landscape is to me." LAM

Jane Roy Brown is a contributing editor to Landscape Architecture.

PROJECT CREDITS **Landscape architect:** Michael Van Valkenburgh Associates Inc., Landscape Architects, New York (MVVA project team: Phase 1—Michael Van Valkenburgh, FASLA; Matthew Urbanski; A. Paul Seck; Phase 2—Matthew Urbanski, Gullivar Shepard; Phases 3 and 4—Gullivar Shepard, Jason Siebenmorgen). **House architect:** Mack Scogin Merrill Elam Architects, Atlanta. **House and site structure contractor:** Mark Conforte Builders, Lovell, Maine. **Landscaping contractor:** Phases 1 & 2—Lovell Logging and Tree Service, Lovell, Maine; Phases 3 & 4—Lucky Landscape Center, Lovell, Maine.

ALLAN BAXTER

THE ATTACKS ON CENTRAL PARK

By Robert Wheelwright

"It's time," said Mr. Hustler, "to remodel Central Park;
At present it's as out-of-date as Noah and his ark."

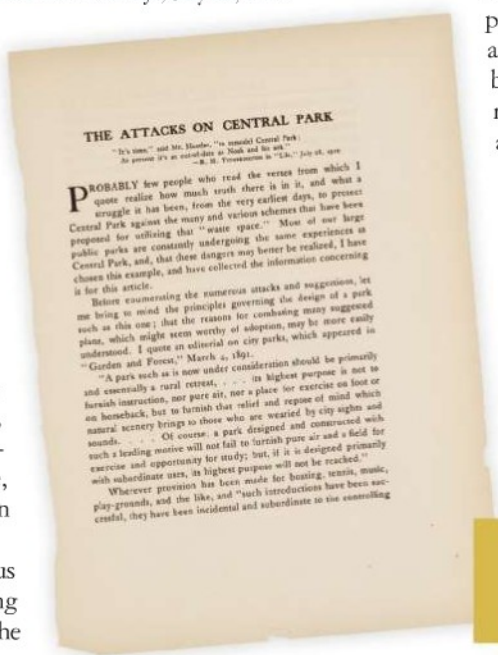
—R. H. TITHERINGTON in *Life*, July 28, 1910

PROBABLY few people who read the verses from which I quote realize how much truth there is in it, and what a struggle it has been, from the very earliest days, to protect Central Park against the many and various schemes that have been proposed for utilizing that "waste space." Most of our large public parks are constantly undergoing the same experiences as Central Park, and, that these dangers may better be realized, I have chosen this example, and have collected the information concerning it for this article.

Before enumerating the numerous attacks and suggestions, let me bring to mind the principles governing the design of a park such as this one; that the reasons for combating many suggested plans, which might seem worthy of adoption, may be more easily understood. I quote an editorial on city parks, which appeared in *Garden and Forest,* March 4, 1891.

"A park such as is now under consideration should be primarily and essentially a rural retreat…its highest purpose is not to furnish instruction, nor pure air, nor a place for exercise on foot or on horseback, but to furnish that relief and repose of mind which natural scenery brings to those who are wearied by city sights and sounds.... Of course, a park designed and constructed with such a leading motive will not fail to furnish pure air and a field for exercise and opportunity for study; but, if it is designed primarily with subordinate uses, its highest purpose will not be reached."

Wherever provision has been made for boating, tennis, music, play-grounds, and the like, and "such introductions have been successful, they have been incidental and subordinate to the controlling motive of the



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park.... Neither recreation, in the specific sense of amusement, nor education, even under its most attractive guise, but refreshment, pure and simple, for body and mind, is the primary office of the public park. And nowhere should this fact be insisted upon more strenuously than in eager American communities, where there is little inclination to give either mind or body their needed quota of peaceful, unambitious hours."

In the Central Park Report for 1859, it says: "No kind of sport can be permitted which would be inconsistent with the general method of amusement, and no species of exercise which must be enjoyed only by a single class in the community, to the diminution of the enjoyment of others." But strongly as the Park authorities, and other people interested in the welfare of the Park, insisted upon the principles governing such public grounds, it did not and has not prevented every sort of a suggestion being made for utilization of the space. It is true, many offers have been made in perfectly good faith by people who did not realize that they might thereby frustrate the purposes of Central Park, but thought of nought but the improvement of it. The Report for 1860 observes "the eagerness that exists in the public mind for the establishment within the Central Park of institutions that will afford the means of popular cultivation and innocent recreation." But, on the other hand, the demands of people who wished to advance their business interests by means of the Park are most astounding.

The Park Report for 1864 says: "If all the applications for the erection and maintenance of towns, houses, drinking-fountains, telescopes, cottages, 'Aeolian Harps,' gymnasiums, observatories, weighing-scales, for the sake of eatables, velocipedes, perambulators, Indian work, tobacco, segars, for the privilege of using steam-engines, snow-shoes, ice-boats, and for the use of the ice for fancy dress carnivals, were granted, they would occupy a large surface of the Park, establish a very extensive and various business, and give it the appearance of the grounds of a country fair, or of a military training field."

When I first undertook this article, I thought it would be interesting to show a map of the Park as it would be if all the suggestions that have been made had been carried out. After working up the material, I saw that, even eliminating as large a list of suggestions as those just enumerated, and several schemes for entirely doing away with the Park, there would be no park space left on such a plan.

Many of the schemes that have been proposed seem to have been but slightly followed in the newspapers of the day, serious as they may have been toward the interests of Central Park. For instance, no notice seems to have been taken in the papers of the time of an act of the Legislature, on March 25, 1862, authorizing the construction of a building for the New York Historical Society in the Park. The Park Board says in its report of 1866 that, "considering its responsible relations toward a valuable portion of the public domain," it ought not to accept the designs submitted for this building.

The early misconceptions (which are still prevalent to too great an extent) as to the real purposes of the Park were well shown when, on the 28th of April, 1864, the 1st Regiment of the First National Guard, in contravention to ordinances of the Board, and in opposition to the remonstrances of keepers at the entrance and on the way, drilled in Central Park. Subsequently another regiment attempted to do the same thing, in spite of the intensely bitter feeling that the 1st Regiment had aroused.

As a result of a movement urged by many eminent physicians of the city, permission was given, in 1867, to a firm "of high reputation," to erect an establishment for dispensing artificial mineral waters in the Park, for the benefit of invalids and others who would partake of such waters. Though involving the same principle, the Commissioners caused the removal, the same year, of "various shanties, booths, and stands" that had been placed, "as is claimed, by some city authority or permission," on the walks bordering the park. Several years after the completion of the mineral water pavilion, it was bought by the city, as it was decided that the private ownership of buildings within the Park was a bad thing. Since then the building has been leased by the city, and is still used for the sale of mineral waters.

In the report dated April 30, 1872, the Commissioners again remonstrated against the innumerable plans proposed for utilization of park space. "It has, for example, been seriously proposed that it should be used as a place of burial for the more distinguished dead of the city; that all religious sects should be invited to build places of worship upon it; and often that some central feature should be introduced, corresponding in obvious importance to the dwelling in private grounds." A serious discussion followed the suggestion, by a school teacher, of modeling the "North Meadow" to form a map of the world. Suggestions went from a street railway through the Park to race tracks and itinerant preaching.

A year previous to the publishing of this report, the first movement toward placing the Museum of Natural History and the Metropolitan Museum of Fine Arts in Central Park was made by an act of the Legislature. This authorized the Board of Commissioners of Public Parks in New York "to construct, erect, and maintain in Manhattan Square, or any other public Park, square, or place, in said city, a suitable fire-proof building" for each of these institutions. By an act of June 13, 1873, the Commissioners were authorized to erect these buildings in any part of Central Park.

In 1876, Manhattan Square was given over to the erection of the building for the Museum of Natural History, and by act of the Leg-

islature, April 22, 1876, the Metropolitan Museum was authorized to build on that portion of Central Park where it is now situated. We can, today, see better than ever before the mistake that was made by these acts. The occupation of Manhattan Square is not serious, as it is entirely cut off from Central Park by Eighth Avenue; but, with the rapid growth of the Metropolitan, and its extensive plans for future development, stretching from 79th to 86th Streets along Fifth Avenue, and spreading back to the Reservoir, there is need of careful watching lest a large area of our park be destroyed.

> If all the [park use] applications were granted, they would give Central Park the appearance of the grounds of a country fair, or of a military training field.
>
> — Park Report of 1864

In the earliest history of Central Park, attempts were made to utilize areas for real-estate purposes. The boldest of all such schemes was brought forth in an article in *Scribner's Magazine* for August 1904.

The title was "The Plan of New York and How to Improve It." It was an idea so bold, and dangerous, if by chance it had been seriously adopted, that it bears considerable discussion. The plan that accompanied the article showed the lines of Sixth and Seventh Avenues continued through Central Park; the park area between Sixth and Fifth Avenues, and between Seventh and Eighth Avenues, was occupied by buildings; and all the property north and south of the Park, between Sixth and Seventh Avenues, was cleared of buildings. The result was a parkway strip, one thousand feet wide and about ten miles long, and no Central Park!

The article was written by a man who has one of the highest reputations in New York as an architect. That such a man could seriously consider such a scheme an improvement, that he could consider such a scheme financially practicable, is certainly most astounding. I really feel that we must quote a little from his article in *Scribner's.*

"If one examines the present situation without prejudice, he must admit that the *raison d'être* for the park as it stands is becoming less and less apparent. In its laying out and treatment, Central Park is essentially a suburban pleasure-ground. Its scenery is naturalistic; its lakes, groves, and meadows are intended to represent a bit of beautiful rural landscape. Before tall buildings began to surround it, it fulfilled this function fairly well; the illusion was complete enough to be satisfying; but now, to some extent, the charm is lost by the intruding buildings, and, in the future, when completely surrounded by them, it will be almost entirely lost. It will then cease to be a rural pleasure-ground and

become simply the affectation of one, in the heart of a large city, where every requirement of common sense and good taste calls for a different kind of treatment." This may be the kind of "common sense and good taste" of the eminent architect, but certainly not the kind that would fulfill the successful attainment of the objects of such a park. Fortunately, as the *Times* of July 31, 1904, said, "It is needless to accumulate either practical or sentimental objections to this plan of Haussmannization; the interest of it is likely to remain exclusively academic." It seems, however, to have started many schemes for cutting up and for building over the Park, for, in the years following, suggestions keep appearing with this end in view.

So we find a prominent New Yorker suggesting, in January 1905, to the New York City Improvement Association, to practically abolish the park as it now is, saying, "There is an ugly, inappropriate square of wilderness slapped down into the middle of our city.... Make an esplanade or broad street after the fashion of the Champs-Elysées from the Sherman Circle to the Mall...from the Mall run a grand central avenue... through to the end...let there be streets or roadways from Fifth to Eighth Avenues south of the Mall, and crossing the esplanade." That is the gist of a scheme that caused a great amount of discussion and commotion. In May, the *New York Inquirer* has a suggestion "to do away with a pleasure-ground that has become a menace and a nuisance," extending Sixth and Seventh Avenues, and selling all the land. This they followed up by another article, June 2d, praising the scheme and telling the general approval it met. Owing to the lack of notice taken of it by the papers, we rather doubt if it received the amount of attention that was claimed.

In May [1905], the *New York Inquirer* has a suggestion "to do away with a pleasure-ground that has become a menace and a nuisance," extending Sixth and Seventh Avenues, and selling all the land.

Then we find, in December of the same year, another movement that has been brought up several times since, once so recently as the past spring, that was to widen Eighth Avenue, cutting in two the Park, as proposed two years before for Fifth Avenue. The reason for this is most curious. When the car tracks were laid on Eighth Avenue, they were placed next to the walk bordering Central Park. This has thrown all the traffic on one side of the street, making it very confused, and also making it inconvenient in boarding a southbound car. To remedy this, no one has suggested moving the tracks to the center of the street,

but, instead, strong movements have been made to build another roadway, on and within the boundary of the Park. Of course, the reasons against this are obvious, and the several movements have been successfully killed, so far.

In February 1906, the *Herald* has a letter planning to abolish the lakes, as they are "useless in winter and dangerous to health in summer." The writer would replace them with playgrounds, or an extension to the Menagerie. Another letter soon after suggests the sale of land in the park. These and many similar ideas that have been promulgated, though unsuccessful, all go to show wherein lies a very possible danger, and one which cannot be lightly passed over, especially when the matter goes so far as to be suggested by a public officer. (In 1908, the Sewer Commissioner of Queensboro suggested leasing plots in Central Park to multimillionaires.)

When the New Theatre was built, the architects were most anxious to grab a portion of the Park for a plaza, to set off their building more advantageously. Let us hope that no further attempt of this sort is made. Since then, the question of a model dairy has come up, and has died, at least for a time. The most recent scheme was that brought forward this summer for occupying the North, and the two adjacent meadows, with recreation grounds of all sorts, absolutely ruinous to the beauty of those great open spaces. We trust that public opinion will once more assert itself and prevent this destruction.

It is evident that the permanent safety of the park must depend on a widespread popular appreciation of the true ends that it should serve.

As the Park Report for 1864 says: "A catalogue of applications to use the lawns, the trees, the roads, the walks, and the waters, for purposes entirely foreign to the objects of the Park, and utterly incompatible with its preservation would give some idea of the ease with which the Park could be overrun if these applications were granted." Although my catalogue is far from complete, I believe that I have touched upon, at least, all the most important attacks.

I cannot deal, in this article, with ways, legislative or otherwise, of protecting the Park, or discuss the work of the recently organized committee for its protection and improvement; but it is evident that the permanent safety of the park must depend on a widespread popular appreciation of the true ends that it should serve. LAM

Robert Wheelwright was a principal in the New York City-based landscape architecture firm Lay, Hubbard, and Wheelwright with Charles Downing Lay and Henry Hubbard. He, along with his partners, began Landscape Architecture *magazine.*

Editor's Note: This essay has been edited for length.

THE TIPPING POINT

How roof design and location affect Temple University's sloped green roof.

By Rob Kuper, ASLA

IN JUNE 2008, another professor and I clambered up a caged ladder, popped a hatch, and emerged onto the roof of the athletics building at Temple University's Ambler campus. On this roof, I had to watch where I stepped more carefully than on others I have visited. It is composed of two sloped planes facing different directions—a design that makes it a bit of an anomaly among green roofs and has proven a challenge for plant establishment and overall maintenance.

That June, the roof was covered with low-growing succulents and tall weeds. My visit with assistant professor of horticulture Mike Olszewski marked Temple University's renewed interest in the so-called PECO green roof (a reference to the local electric company, which provided a grant for the project). Olszewski and I had been asked

An aerial view of Temple University Ambler's PECO green roof from the southwest in the fall of 2006, *top*, shows the effects of the roof slope and orientation after one summer of growth. A view looking southwest in August 2008 shows the unequal distribution of weeds planted by the wind, *above*. The wing facing southeast (on the right) has considerably more weeds that are also taller than those on the opposite wing.

COURTESY JOHN TUCKERMAN, TOP; ROB KUPER, ASLA, BOTTOM

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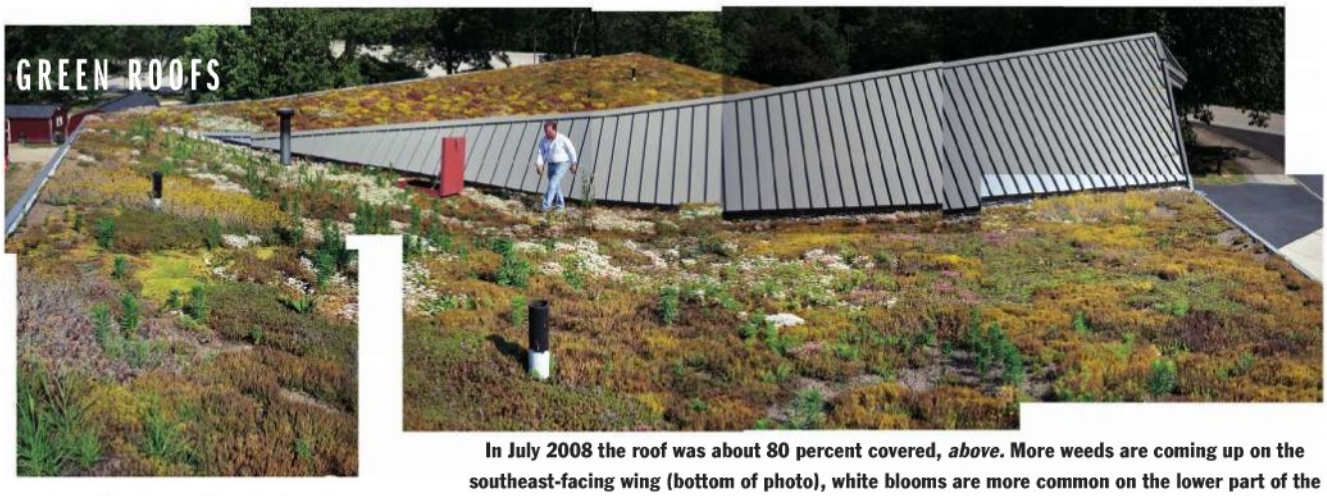


In July 2008 the roof was about 80 percent covered, *above*. More weeds are coming up on the southeast-facing wing (bottom of photo), white blooms are more common on the lower part of the slope, and yellow blooms are evenly distributed on the northwest-facing side. The six-foot-wide perimeter was planted with new, taller plugs in early May 2009, *below*. The northwest-facing wing (top of photo) is more densely covered with vegetation than the wing facing southeast.

ROB KUPER, ASLA

to beautify the roof, articulate its purpose with signage, and make it visually accessible. In working to achieve these goals, we learned of the roof's original inspiration, of past opposition to it within segments of the university, and of factors that helped define the shape and size of the athletics building and the slope and orientation of the two planes. On our initial visit we were unaware of how the building and roof design affected where we saw weeds growing and where the original succulents had failed. Our research and observations over the past year have informed subsequent experiments we expect will specifically improve plant health and coverage on the PECO green roof and generally aid other designers considering sloped green roofs.

Conceiving the Green Roof

Having a green roof at Ambler, which is 15 miles northwest of Temple's main campus in Philadelphia, is logical given the campus history. Originally founded in 1910 as the Pennsylvania School of Horticulture for Women, its students learned how to care for soil and water by working in fields, gardens, and greenhouses. In the 1980s, John Collins, FASLA, started the landscape architecture program and continued to involve students and faculty in designing and implementing ecologically based campus master plans, courtyards, and gardens. In 2000, Temple University officially established Ambler College and designated the campus an arboretum. That same year the Center for Sustainable Communities (CSC) was created and began facilitating, consulting, and educating people about collaborative planning, management, and restoration projects in and around Ambler. In 2002, programs in community and regional planning were approved by Temple's board of trustees and joined the landscape architecture and horticulture programs.

Ambler has long sought to define its identity and role within, and value to, the larger university. Since the creation of Ambler College, a green roof, according to Jeff Featherstone, professor of community and regional planning and former director of the CSC, was seen as a simple, cost-effective way to promote sustainability within the campus, provide unique research opportunities, and distinctly define Ambler within Temple University. Plus, few green roof examples existed in the United States at the time, let alone in the region. The landscape architecture and horticulture faculty noticed this void and made green roofs the focus of Ambler's 2002 Philadelphia Flower Show exhibit (see Land Matters, *Landscape Architecture,* July 2002). That exhibit's high visibility and potential research opportunities encouraged faculty to propose bringing a permanent green roof example to Ambler to help define Temple's "green" campus.

PECO energy, Philadelphia's supplier of electricity and natural gas, wanted to help with that mission. PECO representatives visited and were intrigued by the 2002 exhibit's energy savings, environmental capabilities, and educational intent. These were similar goals to other projects to which PECO had been awarding grants, so it seemed only natural that landscape architecture and horticulture faculty apply for one. They evaluated four possible green

GREEN ROOF CASE STUDY

roof locations and concluded that retrofitting an existing roof would be more challenging but have a greater demonstrable impact than adding a green roof to a new building. The existing buildings chosen all received a fair amount of sunshine and were within the campus core. Ideally, the green roof would be above West Hall, the building housing the CSC, to express its sustainable principles. Two other locations—the dining hall and the potting shed of the original school greenhouse—would allow the roof to be visible from the ground. Whatever the location, faculty determined $50,000 would cover the cost of a green roof. PECO granted the request in full.

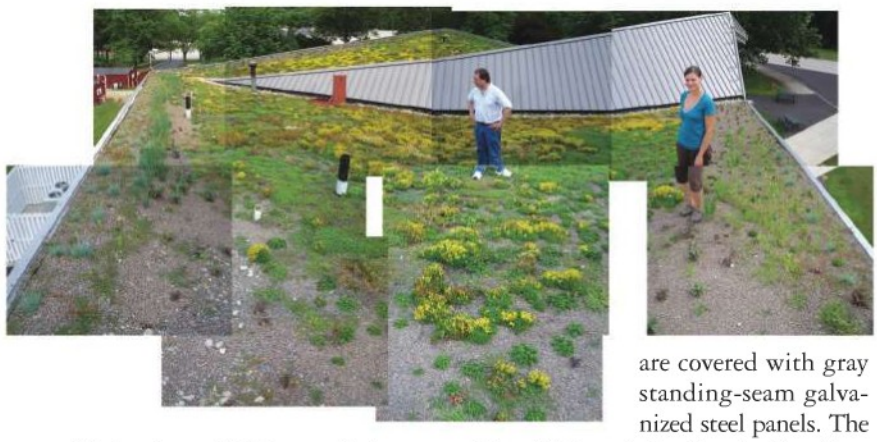
Unfortunately, the Temple University facilities management department opposed the green roof proposal. "It's understandable," says Skip Graffam, ASLA, former assistant professor of landscape architecture. "Retrofitting an existing roof required structural investigations, logistical planning, and a change in materials and maintenance." Installing a roof that encouraged the retention of water and additional weight conflicted with traditional thinking about roofs. For a department managing hundreds of people and university buildings on a tight budget, a green roof presented the possibility of unpredictable challenges.

Ambler's dean went directly to the president of the university, David Adamany, to push for the green roof. According to Kathy Beveridge, the former director of alumni affairs and development, Adamany supported the installation because he understood the uniqueness and value of a green roof to the vision of the university and, in particular, the sustainable focus at Ambler. At the time, Temple was moving its baseball, softball, and soccer fields to Ambler. A new athletics building was proposed and selected as the location of a green roof instead of the existing faculty selections. "We just couldn't convince facilities to put a green roof on an existing building," Beveridge says.

Designing the Building and the PECO Green Roof

The 4,070-square-foot Ambler athletics building is square, oriented due north–south, and located atop a hill overlooking the ball fields, approximately a 10-minute walk from the center of campus. The building entrance faces southwest toward

In late May 2009, ***above,*** the perimeter plug plantings are beginning to grow, as are the established plants in the center of the roof. In late June 2009, ***below,*** yellow blooms blanket the wing facing northwest (top of photo) more than the southeast-facing wing. ***Dianthus*** plants are beginning to bloom along the perimeter and the ***Allium*** plants are growing well.



a vehicular drop-off. Mature oak, locust, and hickory trees stand to the southeast of the building. The size, shape, and orientation of the building were defined by existing features of the site, says Jim Bogrette of Kimmel Bogrette Architecture + Site, the building's designer. "We inherited the vehicular turnaround and arterial paths to the amphitheater [adjacent to the northwest corner of the building] and also wanted to save as many trees as possible."

Kimmel Bogrette presented two roof concepts to Temple. The first comprised two rectangular planes joined with an offset ridge. The second, more complex design sought inspiration from the Temple mascot, an attacking owl. Adamany, Temple University's president at the time, selected the latter design.

The roof appears W-shaped from the ground. The green roof wings cover approximately 3,700 square feet and slope inward at 2:12. The planes of the center peak slope upward at about 8.75:12 and are covered with gray standing-seam galvanized steel panels. The ridge of this peak rises from back to front to a height of about 14 feet.

Roofscapes Inc., a green roof engineering, design, and installation firm located in Philadelphia, designed the green roof along with the architect. Temple facilities management served as an intermediary between the landscape architecture and horticulture faculty and the designers and contractor. Given the budget, building and roof characteristics, the desire for minimal additional resources and maintenance, and potential research opportunities, an extensive (thin) green roof was selected. Atop the plywood roof deck, the primary roof membrane is EPDM rubber. Above that lies a rubber root barrier, geocomposite drainage layer, separation fabric, and an unusually thin three- to three-and-a-half-inch layer of growth medium composed primarily of expanded shale. No insulation rests below the green roof layers and no irrigation is used. Below the sloped roof is a void where the heating and

ROB KUPER, ASLA

cooling system and other infrastructure are housed. A second plywood roof covered with EPDM protects offices and other habitable spaces below, offering extra insurance against potential leakage.

Plant experiments on the roof were not originally considered. Segments of the university already resisted having a green roof on campus, so to minimize objections and encourage the rapid design and construction of the roof, tests of green roof methods and plants would take place only in the greenhouse and outdoor research plots nearby. The plant list for the roof, devised by landscape architecture and horticulture faculty and students, was composed primarily of proven *Sedum* species. It also responded to apprehensions that arose during the design process regarding root penetration, leaking, and the need for excessive maintenance (see "Plant List," page 58). Plugs grown from seed in Temple's greenhouse were installed on the southeast-facing wing of the roof, and cuttings supplied by Emory Knoll Farms were installed on the northwest-facing side. In October 2005 the athletics building was officially opened and the PECO green roof dedicated.

Revising the Green Roof

Two years after installation the maintenance contract expired and those involved with introducing the green roof had moved on. Temple University welcomed a new president, Ann Weaver Hart, who made sustainability a top priority. To develop a vision and identify sustainable university objectives, President Hart developed a task force cochaired by professor of landscape architecture Lolly Tai, FASLA, and Bill Bergman, Temple's vice president of operations. It was Tai who asked Olszewski and me to renew interest in the green roof by addressing three objectives: (1) add signage; (2) make the roof accessible; and (3) make it beautiful.

During our June 2008 inspection, we immediately noticed a distinct difference between one side of the green roof and the other. The wing facing northwest was almost completely vegetated, while the southeast-facing wing was sparsely covered and had many weeds. The corner of this wing was also experiencing severe erosion; the drainage layer and root barrier were visible. Vegetation had crept into the large aggregate at the base of the standing-seam galvanized

From the roof corner facing northwest in late June 2009, plant coverage and health are distinctly more dense and vibrant than on the opposite roof wing.

ROB KUPER, ASLA

steel roof, under the metal, and beneath the root barrier. Generally, only *Sedum* plants had survived (see "Plant List," page 58).

We felt revising the planting plan would help achieve two of our goals: beautify the green roof and make it visually accessible. We briefly considered arranging the plants into a pattern but soon realized that doing so required more maintenance and conflicted with the inherent growth characteristics and aesthetic of green roof plants. Instead we decided to continue what had worked well. While most of the *Sedums* were low growing, bloomed briefly, and left brown seed heads, Olszewski noticed

that *Sedum floriferum* grew about eight inches tall, had relatively large leaves, and was green for a long period of time. When plants were installed in October 2008, we made sure to include a large percentage of this species along with spring and fall crocus bulbs, for seasonal interest. People passing in front of the building may receive only a glimpse of the roof. Ensuring that what they see is green for the longest period of time became a priority.

Visitors may also notice plants along the roof edge that were not previously visible. *Sedum* 'Matrona,' *Talinum teretifolium, Dianthus gratianopolitanus,* and *Allium cernuum,* each capable of growing at least 12 inches tall in shallow depths of growing medium, replaced all the low-growing plants within six feet of the edge along the perimeter of the roof. We considered mounding another six inches of growing medium within this area to elevate the plants and further diversify our potential plant palette. Weight concerns dissuaded us from attempting this. Drooping plants along the roof edge were also proposed. *Delosperma nubigenum* 'Basutoland' and *Delosperma ecklonis* var. *latifolia* were planted immediately along the edge and were expected to hang over and interrupt the parapet.

GREEN ROOF AT A GLANCE

TEMPLE UNIVERSITY AMBLER ATHLETICS BUILDING/ PECO GREEN ROOF

LOCATION: Ambler, Pennsylvania

INSTALLED: 2005

SIZE: 3,700 square feet

DEPTH OF MEDIUM: Three to three and one-half inches

PLANTS: *Sedums,* grasses, bulbs (see Plant List)

WEIGHT: 20 to 27 pounds per square foot, saturated

COST: $12 per square foot

ESTIMATED COST OF COMPARABLE CONVENTIONAL ROOF: The building was always designed to have a green roof and was not estimated as a conventional roof.

IRRIGATION: None

SLOPE: 2:12

MAINTENANCE: Three visits per year from contractor

Reviewing the Green Roof

During the fall months of 2009, Olszewski and I observed and analyzed the effects of our revisions on the roof. Removing plants within the roof perimeter made the growing medium susceptible to erosion and slippage. An extremely wet and stormy spring and summer washed and blew much of the medium and even some plants away, especially on the southeast-facing corner. Concrete diamond-cell paving blocks placed there do hold the green roof subsurface layers down to protect the roof substructure but do not break the wind or keep the growth medium in place. A combination of items is being considered to ameliorate the problem. A slope stabilization mat such as Enkamat may hold the substrate in place by allowing plant roots to become entwined with the mat filaments.

The *Allium* plantings along the eastern roof edge looking south in late June 2009, *left*, are close to 12 inches tall but not close enough to the edge to be visible from the ground. The effects of insufficient growth medium depth are becoming evident along the roof edge. In mid-August 2009, on the eastern roof parapet looking south, *below*, the effects of erosion and slippage are obvious and have resulted in a loss of three inches or more of growth medium at the roof edge.

ROB KUPER, ASLA

In addition, small to medium-sized boulders may be placed along the edge to serve three purposes: First, they will deflect prevailing winds away from the growth medium. Second, they will break up the smooth, uninterrupted edge of the roof—people may be more inclined to look up and wonder why boulders are on the roof. Finally, the boulders will provide habitat for insects and other small wildlife (see "Elevating Habitat," *Landscape Architecture,* January 2009).

How the plants have fared depends on the plant and its location. The *Sedum floriferum* plants that have been moved to or planted in the center of the roof have become well established. The interior of the roof is densely covered and displays an impressive mass of yellow flowers in midsummer. Many crocus did come up in the spring, more on the northwest-facing wing than the southeast facing. Those that bloomed on the southeast-facing wing did so near the convergence of both wings, where the flattest portion of the roof exists. Both the *Dianthus* and *Allium* plants along the roof perimeter have flowered profusely and achieved their full potential height, form, and color. Also along the edge, *Sedum* 'Matrona' began the season well, growing to a height of four to six inches before stunting or dying. The drooping *Delosperma* species both failed to grow. They were installed as plugs along the roof edge and most likely did not have a sufficient depth of growing medium. The combination of erosion, slippage, and the roof deck sloping upward at the edge to meet the metal parapet makes the edge too shallow to grow on. We are considering adding two to three inches of medium at the edge, along with a slope stabilization fabric, to compensate for the deficiency before replanting.

Overall, the growth and spread of plants on the roof wing facing southeast lag behind the opposite side. Originally, the southeast-facing wing was planted with plugs while the northwest-facing side was planted with sprigs. One might expect the plugs to become established faster and fuller than the sprigs. The opposite happened. The side facing northwest flowered more than the side facing southeast and was covered more densely with plants. In the recent plant revision, the perimeter of both sides was planted with plugs and the results were similar to those at installation: The northwest-facing wing fared better than the other.

Plant List

SINCE 2005 the plant list for the PECO green roof has changed. The list at installation was composed primarily of proven *Sedum* species with the remainder selected for research and observation. The revised list capitalized on the plants that fared well since installation and added taller species capable of growing in three and a half to four inches of medium.

2005 INSTALLATION

Antennaria spp. • Pussytoes
Danthonia spicata • Poverty oatgrass
Delosperma spp. • Delosperma
Houstonia spp. • Bluet
Sedum acre • Goldmoss stonecrop
Sedum album • White stonecrop
Sedum floriferum 'Weihenstephaner Gold' • Stonecrop
Sedum hispanicum • Spanish stonecrop
Sedum pachyclados • Stonecrop
Sedum pinifolium • Blue spruce sedum
Sedum sexangulare • Tasteless stonecrop
Sedum spurium • Tworow stonecrop
Sedum telephioides • Allegheny stonecrop
Sedum ternatum • Woodland stonecrop
Viola x *palmata* • Early blue violet
Viola pedata • Birdfoot violet

2008 REMAINING PLANTS

Sedum acre • Goldmoss stonecrop
Sedum album • White stonecrop
Sedum floriferum 'Weihenstephaner Gold' • Stonecrop
Sedum hispanicum • Spanish stonecrop
Sedum pinifolium • Blue spruce sedum
Sedum sexangulare • Tasteless stonecrop
Sedum spurium • Tworow stonecrop
Sedum telephioides • Allegheny stonecrop

2008 ADDITIONS

Allium cernuum • Nodding onion
Allium schoenoprasum • Wild chives
Crocus spp. • Crocus
Delosperma ecklonis var. *latifolia* • Ice plant
Delosperma nubigenum 'Basutoland' • Yellow ice plant
Dianthus gratianopolitanus • Cheddar pink
Sedum floriferum 'Weihenstephaner Gold' • Stonecrop
Sedum 'Matrona' • Matrona sedum
Talinum teretifolium • Quill fameflower

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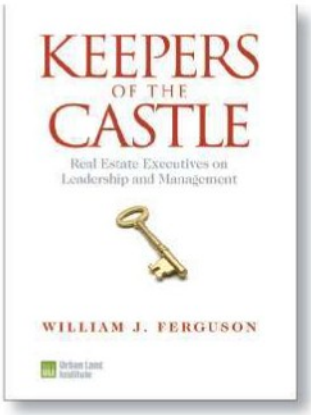

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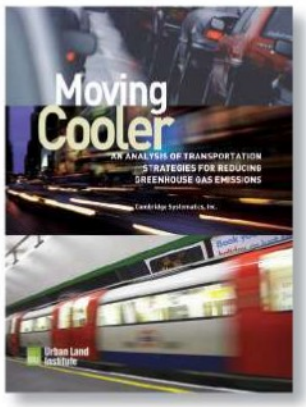

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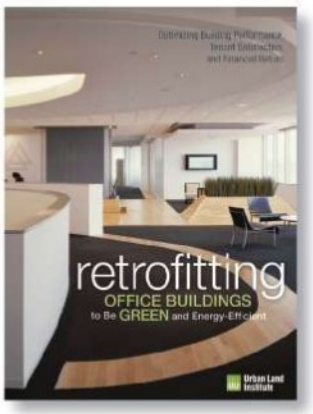

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The shape, form, location, and orientation of the roof appear to have affected the green roof. The extreme corner facing southeast suffers most because it points up and toward prevailing winds and storms. The building itself is perched atop a small hill, one of the highest on campus. No trees deflect or slow wind as it blows across the flat, manicured ball fields below. The standing-seam galvanized steel roof and the southeast-facing wing may block wind from reaching the side facing northwest. A direct orientation toward the sun on the southeast-facing side may also increase the rate and amount of evaporation and make it more difficult for plants to flourish. The northwest-facing side, on the other hand, slopes away from the sun and may even receive some early morning shade from the stand of trees nearby. Together these variables suggest that green roofs sloped up and slightly away from direct sunlight and protected from wind may prove successful. Roofs sloped up and slightly toward the sun and exposed to wind and rain may have difficulty getting established and maximizing the benefits of being green.

In August 2009, the separation fabric, root barrier, and drainage layer on the roof's southeast-facing corner are visible due to erosion. Small rocks were initially used to weigh down the layers and growth medium and break the wind. Concrete diamond-cell paving blocks were also used but have not succeeded in preventing further erosion.

ROB KUPER, ASLA

A lack of maintenance and attention may also have affected the green roof. The unusually thin three- to three-and-a-half-

inch layer of growing medium maximizes the economy of the roof but may make it less tolerant of environmental or maintenance changes. Some of the problems occurring at Temple may have been avoided had maintenance continued uninterrupted. Elsewhere, facilities management departments may need to hire outside contractors, train employees, or require appropriate university department faculty to properly care for a green roof. As occurred at Temple, research, faculty, and administration may come and go along with their interests. Originally, monitoring equipment was planned but to date has not been purchased for use in green roof research at Ambler due to unforeseen costs and a lack of faculty presence, time, or interest in monitoring. Recording roof temperatures, wind direction and speed, stormwater runoff, and evapotranspiration rates may contribute to understanding the growth characteristics of each green roof wing. Other universities or institutions contemplating the installation of green roofs should consider a research plan, research funding, and long-term maintenance as integral to the introduction of a green roof.

Universities should also consider involving landscape architects. The green roof at Ambler has shown that landscape architects can encourage the introduction of sustainable strategies like green roofs at universities. Faculty understood the need to reflect the sustainable principles of the college on campus, says Ambler's former dean, Sophia Wisniewska, and accomplished all the "moving and shaking" to get the job done. It appears that the combination of Ambler's green roof, heightened global interest in sustainable issues, and a new president with an explicit sustainable agenda have made the university as a whole more receptive to green roofs. A main campus master plan, currently being undertaken by OLIN, includes proposals for many green roofs atop new buildings.

Landscape architects also recognize that green roofs are living systems sensitive to environmental conditions. Sloped roofs are more susceptible to wind and solar incidence and will likely retain less moisture than flat green roofs. Each of these factors makes sloped roofs less hospitable to plants, no matter how tolerant they are of windy, dry, and sunny conditions. In the future, landscape architects may go one step farther than proposing a green roof; they may push for *flat* green roofs. LAM

Rob Kuper, ASLA, is an assistant professor of landscape architecture at Temple University.

PROJECT CREDITS: Client: Temple University Ambler, Ambler, Pennsylvania. **Green roof system:** Roofscapes Inc., Philadelphia. **Architect:** Kimmel Bogrette Architecture + Site, Conshohocken, Pennsylvania. **Structural engineer:** Long, Tann & D'Onofrio Inc., Wilmington, Delaware. **Plant supplier:** Emory Knoll Farms, Street, Maryland; Temple University Ambler. **Contractor:** David Brothers Landscape Nursery and Contractors, Worcester, Pennsylvania. **Waterproofing installer:** Hamada Roofing, Philadelphia. **Roof contractor:** Florkowski Builders Inc., Philadelphia.

ART IN THE LANDSCAPE

Artist Joseph Ingoldsby, ASLA, stands in a coastal salt marsh with some of the color studies he has created as part of his Landscape Mosaics series.

JEFFREY DUNN

NATURE'S PALETTE

Joseph Ingoldsby brings his background in landscape architecture to his work as an environmental artist. By Adam Regn Arvidson, ASLA

THE FOUR-SEAT propeller-driven Piper Cherokee 180 takes off from a grass runway in northern Illinois. In the front seat, next to the pilot, is artist Joseph Emmanuel Ingoldsby, ASLA. He's about to see his most recent artwork for the first time. As the small plane whines over the farm fields and small towns of the rural Rock River Valley, the image comes into view: a bison, a wolf, and an eagle carved into a grassy field. Rendered simply but clearly, the members of this triad are what Ingoldsby calls primal species—animals rooted in our cultural consciousness, animals that conjure images of our wilder existence, animals that are threatened because of our own actions.

With the Cherokee banking and circling, the acres of art seem vast, yet they are dwarfed by the surrounding landscape. It is certainly an interesting way to see Ingoldsby's work. And that makes it an appropriate introduction to this Massachusetts-based artist's 35-year career. Ingoldsby has always experimented with different ways of seeing—and helping others see—the landscape. He distills ecosystems to their colorful essences. He sculpts species realistically with paper, bronze, and earth. He installs colored posts and squares in the landscape to draw attention and spark discussion. He installs work in natural areas, urban environments, botanical gardens, and galleries. He claims as inspiration the monumental environmental art of Robert Smithson, the light and color installations of James Turrell, and the site-specific novelties of Christo and Jeanne-Claude.

Ingoldsby is also inspired by famed landscape architect Ian McHarg. In his lifelong quest to, as he describes it, make the invisible processes of nature visible, Ingoldsby went

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ASLA Honor Award Recipient, Bassil Mountain Escape by Vladimir Djurovic Landscape Architecture (photo by Geraldine Bruneel)

ART IN THE LANDSCAPE

to the University of Pennsylvania to study under McHarg. He earned his master of landscape architecture degree in 1989. "I wanted to get the science behind the work," he says. "That includes an analytical approach to landscape."

McHarg is best known for his pioneering work with overlays. He essentially invented the system of documenting and drawing discrete aspects of a site on different sheets of vellum, then laying them one on top of another to see where there is overlap. This critical inventory and analysis process, still used by many landscape architects today whether on hand-drawn graphics or GIS, was McHarg's way of letting nature drive design. That in itself was a major departure from the prevailing modernism of the 1960s. In 1969, he wrote *Design with Nature,* a seminal work of landscape architectural theory.

Ingoldsby, who had been primarily creating paintings since his graduation in 1974 from the Massachusetts College of Art and Design (Mass Art) with a bachelor of fine arts, was drawn to McHarg in part because of his own growing interest in the science of nature.

In the early 1980s, Ingoldsby was involved with a group of artists and scientists associated with Mass Art and the Center for Advanced Visual Studies, a contemporary art center in Massachusetts Institute of Technology's School of Architecture and Planning that since 1967 has been commissioning major collaborative artworks based on scientific study.

While a student of McHarg's at Penn, Ingoldsby used the master's overlay system and his own art background to create pencil-drawn graphics of Pennsylvania's Schuylkill River—through the eyes of fish, specifically the American shad, which migrates between the ocean and freshwater creeks. The shad is threatened by human intervention, primarily through the construction of dams along its spawning streams (the better-known salmon is faced with similar issues). That analysis, that understanding of the point of view of a single species, led—eventually—to a temporary installation along the Neponset River in Boston, for which Ingoldsby installed inflatable fish just below the Lower Mills Dam and helixes of balloons, symbolizing egg clutches, along the adjacent riverwalk.

And "eventually" is the right word here. That Neponset work wasn't realized until 2005, a full 16 years after Ingolds-

For the 2009 Fields Project Arts Festival in Oregon, Illinois, Ingoldsby etched three iconic American animals—bison, eagle, and wolf—into a fallow field.

JOSEPH EMMANUEL INGOLDSBY, ASLA

by received his MLA degree. It is true that Ingoldsby's work has taken time. He has generally embraced a few key subjects—whooping cranes, salt marshes, the color of the landscape, anadromous fish like the shad—and has explored them in a variety of ways through the years. He allows these explorations to evolve, focusing on creating work rather than securing exhibitions, selling, or even teaching. "I'm happiest," he says, "when I'm working on a project." Some ongoing projects, like his Landscape Mosaics series, have been in the works for 25 years.

All this work deals with nature, or, more specifically, how nature is affected by human intervention. Ingoldsby considers

> "Scientists...are like canaries in a coal mine. They have all this data on landscape change, but there is...nothing that reaches beyond those conference walls."

himself an environmental activist, armed with accurate science and translating it for the general public. He attends seminars on watersheds and coastal issues. "I go to these estuarine conferences and I listen to these scientists," he says. "They are like canaries in a coal mine. They have all this data on landscape change, but there is no publicity, nothing that reaches beyond those conference walls."

So he puts inflatable fish above a river, or he sets colored posts along the length of a salt marsh creek, or he plans an Indian effigy mound-inspired earthwork in the form of an endangered whooping crane. "Some of my work may seem esoteric," he admits, "but you know what? When people saw the schools of fish in the Neponset River, they got it. They understood that the fish were bumping their noses on the dam." Ingoldsby also, in his level-voiced, soft-spoken way, builds coalitions of concern for

the environment—coalitions that help bring his artworks to fruition and remain afterward to effect positive change. The Neponset River piece was made possible by the Neponset River Watershed Association, University of Massachusetts Boston, and the Massachusetts Division of Marine Fisheries and led directly to the dam being slated for demolition by the U.S. Army Corps of Engineers. For *Crane Effigy Mounds* in Necedah, Wisconsin, he has been working with the community for more than five years. The city has donated the land, and he has local in-kind commitments for grading the site.

He credits his time at Penn for this understanding of the importance of community involvement and how to go about bringing the community into a process. "Whether it's landscape architecture or planning or art," he says, "it is very important to build a constituency. Nothing will happen without the backing of a community as a whole. You do that through education, group discussions, one-on-one discussions, writings, and, in my case, the artwork."

Which is why he has come to Oregon, Illinois, to cut primal species into a fallow pasture. Oregon is home to the Fields Project Arts Festival, an annual event that brings artists from all over the world. The Fields Project includes a typical for-sale art fair; a sculpture competition, from which the winning work joins the Oregon Sculpture Trail, a grouping anchored by Lorado Taft's monumental concrete Indian; and the crop art. This year, four artists, including Ingoldsby, carved images into the fields, which can be viewed by the public in that small airplane for a fee. The artists live with local farm families during their time in Oregon. "We have two things here," says Betty Adams, the festival's founder, "art and agriculture. During the festival, farm families learn a lot about art, and artists learn a lot about where their food comes from."

Before his Cherokee flight, Ingoldsby sat on the grass in the shade near the farmhouse adjacent to his recently completed work. He had just spent a very hot week staking the edges of the image and riding a tractor to direct the cutting. A local farmer came by to load up soybeans. He was curious about the works and said he planned to fly the next day to see them.

Before long, Ingoldsby was asking questions about the beans. What were they for? Did the farmer own them? Were they Monsanto beans? Where were they going next? Did the seed corporation let him replant any seed? The farmer said that was a long story.

Ingoldsby, his soft voice trailing into the steamy afternoon air, grinned slightly. It looked as if he wanted to tell that story.

***Silent Shadows of Whooping Cranes, above,* is a series of paintings based on photographs taken during newly reestablished migrations of those birds.**

Ingoldsby's Work

Icons of the Vanishing Prairies

YEAR: 2009 LOCATION: Oregon, Illinois MATERIALS: fallow pastureland

CREATED FOR THE Fields Project Arts Festival in rural northern Illinois, this large-scale work cuts a composition of bison, gray wolf, and bald eagle into a grassy field. Ingoldsby drew the work, then used GPS to create a large grid in the field and define the edges of the figures. Through the course of one very hot week in June, the artist and a team of volunteers used tractors to cut down grass to create the work. Visible only from the air, *Icons of the Vanishing Prairie* is meant to illuminate the disappearance of the North American prairie ecosystem, 99 percent of which has been converted to crop fields, towns, and housing developments.

Whooping Cranes

YEAR: 2003–present LOCATION: Necedah, Wisconsin, and Oregon, Illinois MATERIALS: various

INGOLDSBY has been studying the great whooping crane since 2003. These gigantic white birds—their wingspan can reach six feet—make an annual migration from Canada's Wood Buffalo National Park to Aransas National Wildlife Refuge in southern Texas. In 1941, due to habitat loss and hunting, the migrating flock's numbers had dwindled to 15 birds. Though the number has rebounded to nearly 200, the Whooping Crane Recovery Team, a multinational recommending body, felt that new flocks needed to be established to reduce the potential risk to the bird.

In 1993, a new nonmigrating flock was established in Florida, and then, in 1999, a second flock was taught—by ultralight pilots who were dressed as cranes—to migrate between Necedah National Wildlife Refuge in Wisconsin and Chassahowitzka National Wildlife Refuge in Florida. Ingoldsby became interested in the cranes while doing research for his work on the 2004 Fields Project, the location of which was a migration stopover point. He has created several works based on them, generally centered on their northern summer grounds in Necedah.

Silent Shadows of Whooping Cranes are drawings based on photos taken by the ultralight pilots assisting the birds with mi-

JOSEPH EMMANUEL INGOLDSBY, ASLA

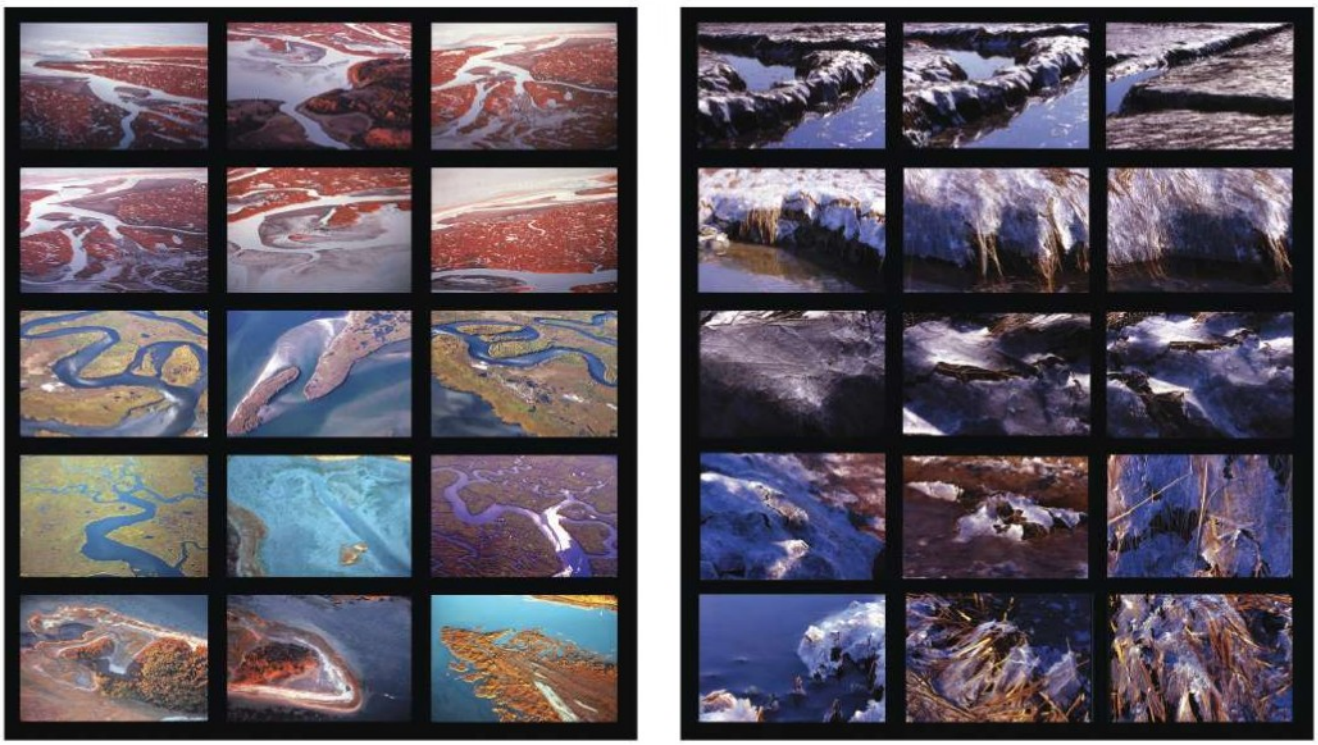
Ingoldsby's long exploration of whooping cranes continued during a 2009 residency at Necedah National Wildlife Refuge, where he created *Shrouds for an Endangered Species, right.* He has plans under way for a monumental earthwork near Necedah called *Crane Effigy Mounds, below right.*

gration. One of the drawings was then cut into a farm field in 2004 for that year's installment of the Fields Project Arts Festival. There were four birds, each approximately two acres in size.

For *Shrouds for an Endangered Species* Ingoldsby created plaster casts of whooping cranes, then made paper in which he embedded prairie and wetland plants gathered from Necedah Wildlife Refuge. The paper, still wet, was draped over the casts. Once dry, the shrouds bore the faint imprint of the birds—a symbolic reference to the crane's absence from the landscape.

Spirits of Whooping Cranes is a component of Ingoldsby's 2009 artist-in-residence stint at Necedah. He uses a banana-leaf (abaca) and cotton mixture to create paper, also embedded with local prairie plants. This unusual mixture creates a leatherlike surface nearly impervious to water. It also shrinks to fit around a form. Ingoldsby is creating seven bronze likenesses of cranes, which he will wrap with paper and place in the landscape at Necedah. Because the real cranes are carefully protected, no casual visitor to the refuge can get close to them—so these stand-ins create awareness of a species that is normally unseen.

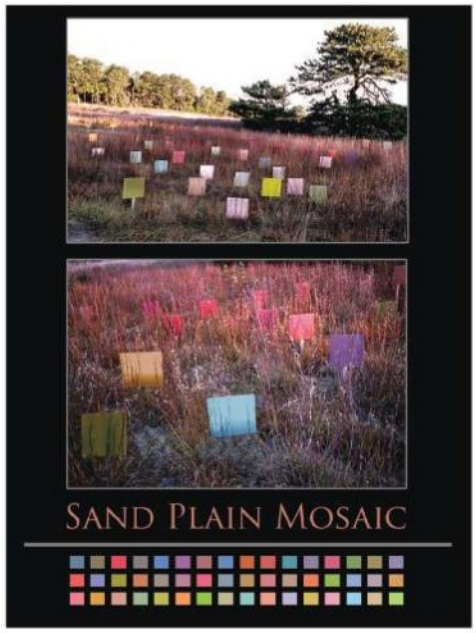
Ingoldsby has been working with the local community for more than five years to create a monumental earthwork near the

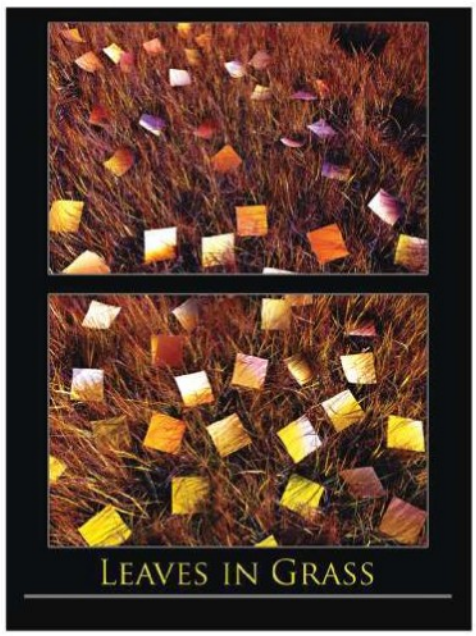


JOSEPH EMMANUEL INGOLDSBY, ASLA

One of Ingoldsby's longest-running artistic themes, Landscape Mosaics looks at a landscape in a pixellated way. *Salt Marsh Landscape Mosaic, above left,* and *Spartina Winter Ice, above right,* group 15 images of a landscape into a single composition.

Necedah Airport. *Crane Effigy Mounds* will sculpt two whooping cranes, one raised and one in relief, on a seven-acre site donated by the city. The mounds will be clad in native big bluestem and wild lupine to create habitat for another endangered species, the Karner's blue butterfly, which subsists almost solely on the lupine. A viewing platform in the shape of a Massasauga rattlesnake will allow visitors to see the entire composition. Topographical drawings and surveys of the sculpture are complete, and Ingoldsby has local commitments for logging, grading, and restoration of the site. The work will conjure the history of the area, which once had numerous Indian mounds that have since been destroyed. *Crane Effigy Mounds,* therefore, will call attention to the three threatened species as well as other lost mounds.





For *Sand Plain Mosaic, above,* and *Leaves in Grass, below,* Ingoldsby studied the colors of the landscape, then isolated them on cards and boards that were placed back into the environment.

JOSEPH EMMANUEL INGOLDSBY, ASLA

Landscape Mosaics

YEAR: 1982–present LOCATION: various MATERIALS: photography, handmade paper, paint

INGOLDSBY began working on his Landscape Mosaics series shortly after he completed a seminar course at the Harvard Graduate School of Design on the art of landscape. The work is rooted in his desire to understand the aesthetics of ecological processes and has touched on ecosystems ranging from Cape Cod to the wetlands of central Wisconsin.

"I go out into a landscape with a Pantone color system," says Ingoldsby, "and I'm actually measuring the color." He does this at various times of day and at a variety of locations. He will also frequently take ground-level and aerial photography (for the latter, he has hung from helicopters and commissioned private jets). Collaboration with color theorists and scientists studying light adds to his understanding of the landscape.

Ingoldsby then creates a multipanel composition for display in a gallery or public space. For his *Salt Marsh Landscape Mosaic* (2006), he placed 15 aerial photographs—depicting the landscape at a variety of scales—in a regular grid. The overall picture relates the color and pattern of the landscape. In *Panicum Virgatum*

Mosaic (2004), the 15-panel grid shows close-up color-altered images of switchgrass that become more and more pixellated with each row. The bottom row is hardly identifiable as vegetation anymore, but it retains the colorful essence of the plants. *Spartina Winter Ice* (2004) takes the same concept and composition into the fourth dimension—time. It arrays a grid of time-lapse photographs taken on the last day of winter, when the noon tide washes up over the salt marsh and the last of the winter ice drops into the water.

Several works go even farther, by intervening in the landscape. The *Sand Plain Mosaic* and *Spartina Salt Marsh Mosaic* (2003) began with a grid of aerial photographs and a Pantone color study, but then Ingoldsby custom mixed paint to match those colors and placed painted wood placards at two different sites within an Audubon sanctuary in Wellfleet, Massachusetts. He also hopes to attract attention. "It's a sensitizing," he says. "People were walking by the sand plain and not giving it a second thought. When you put something out there it gets them to think; it forces them to look."

Ingoldsby has installed Pantone pixels numerous times on numerous sites, placing between 100 and 1,500 placards at a time in the landscape. The wood panels are either installed permanently or must be removed at the end of an exhibition, but one Landscape Mosaic was designed to remove itself. *Leaves in Grass* (2003) is an extension of Ingoldsby's work with the *Spartina patens* salt marsh. For this work, he hand made paper out of spartina fibers and tinted them with inks the exact colors of the autumn marsh. Then he scattered the paper squares in the landscape and allowed the tide to carry them away. "These are meant to be prayers or poems," he says, "for a drowning landscape." And by drowning he means inundated by the crush of humanity.

Requiem for a Drowning Landscape

YEAR: 2003–present LOCATION: Scituate, Massachusetts, and digital work MATERIALS: oak posts, paint, photography, video, digital animation

THIS ONGOING WORK builds on Ingoldsby's examination of the north Atlantic salt marsh. The first element, *Remembrance,* is a highly complex gallery installation that has yet to be fully realized. It includes color

studies, light boxes, and projections that use the seasons as symbols for the birth, growth, and death of the marsh.

The second element, *Recollection,* was an installation of 1,500 eight-foot-tall oak posts in a meander of the North River in Scituate, Massachusetts, in 2003. The posts are painted with custom colors, like much of Ingoldsby's work, and they trace a year in the salt marsh, the colors changing from the bright greens of early growth to the deeper greens and ambers of summer to the exuberance of flowering and fruiting to the muted tones of winter.

The third element, *Retelling,* returns to Ingoldsby's 15-square grids, specifically those from *Panicum Virgatum Mosaic,* but animates the images with Flash software to create an apparent movement in each one. The projection, which was shown at Mass Art in 2004 and 2008, is accompanied by Aaron Copeland's *Piano Sonata.*

Anadromous Fish (Awakening)

YEAR: 2005, 2007 LOCATION: Dorchester, Massachusetts MATERIALS: paper, balloons

ANADROMOUS FISH are those that live most of their lives at sea but return to freshwater rivers to spawn. The salmon is the most famous. The damming of rivers, of course, interrupts this movement from sea back to river and disrupts breeding. The Neponset River in Massachusetts was the first river in the United States to be dammed for industrial purposes, making it a strong symbol of the human effect on anadromous fish. In partnership with the Neponset River Watershed Association, University of Massachusetts Boston, and the Massachusetts Division of Marine Fisheries, Ingoldsby created, in 2005, a temporary installation designed to increase awareness of three struggling species: the rainbow smelt, the river herring, and the American shad. All along the riverwalk he affixed iridescent cutouts of these fish to light poles and railings. The fish were accompanied by helixes of white balloons—each with a single red light within—meant to represent egg clutches and the growing fry inside.

In 2007, he returned to the Neponset, suspending seven handmade, paper, inflated, internally lit herring and shad above the water just below the Lower Mills Dam. Since these installations, the U.S. Army Corps of Engineers has agreed to remove the now-obsolete dam, thereby reopening the river to anadromous fish.

One of the artist's largest installations, *Requiem for a Drowning Landscape: Recollection, top,* traced the course of a tidal creek, *above,* with 1,500 painted oak posts, *right.*

Fish Tales of the Last Generation

YEAR: 2009 (ongoing) LOCATION: various MATERIALS: video, recordings

THROUGH HIS YEARS OF WORK on the coast, Ingoldsby has become concerned not just about the loss of species and ecosystems, but also a way of life. He has been examining commercial fisheries and tracking their transformation from family-operated sailing ships to corporate-owned factory vessels. He has been interviewing and recording elderly fishermen who have seen this transition. He hopes to create an exhibition and a film about yet another endangered species—the small-time coastal fisherman. LAM

Adam Regn Arvidson, ASLA, is a regular contributor to Landscape Architecture *and founder of Treeline, a design/writing consultancy in Minneapolis.*

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ASLA Honor Award Recipient, James Clarkson Environmental Discovery Center by MSI Design, (photo by MSI, Ellen Puckett Photography, Justin Maconochie Photography)

RESEARCH DESIGN CONNECTIONS

Studies examine navigating by feel, designing to persuade drivers to live in car-restricted neighborhoods, and what makes greenways popular. **By Sally Augustin and Jean Marie Cackowski-Campbell, ASLA**

LANDSCAPE ARCHITECTURE, in partnership with the web-based newsletter and daily blog *Research Design Connections,* uses this column to report current research of interest to landscape architects from a wide array of disciplines. We welcome your comments, suggestions about future topics, and studies you have encountered in your own practice.

Learning to Navigate by Changes Underfoot

PEDESTRIANS, particularly those who are visually impaired, can use the power of their feet not only to get around, but also to get important information about the spaces they are in, by discerning changes in materials they walk on. In a recent study in North Carolina, researcher Andrew Payne tested the ability of visually impaired participants to move through a space using the sensation of changing materials underfoot to identify both shifts in path direction and approaching navigational challenges. His long-term goal is to create a design standard that uses walkway surfaces in urban environments to communicate this kind of spatial information. To that end, Payne set out to determine the best combination of materials to produce the most detectable changes underfoot.

Payne's work is significantly influenced by that of Romedi Passini, who has written that effective environmental communication uses architectural, audible, and graphic expressions. "To accommodate all pedestrians, it is important to provide information that can be assimilated using more than one sense. Also, redundancy and consistency increase the likelihood that all users will be able to make informed traveling decisions." Payne's work builds on Passini's by testing the effectiveness of particular pairs of materials to communicate change to the visually impaired. The materials he tested—paired in a total of 21 different combinations—were concrete, brick pavers, stamped concrete, 12-inch slate tiles, 12-inch concrete pavers, manufactured cobblestone, and nonslip grit over concrete.

Payne carried out his research at the Governor Morehead School for the Blind in Raleigh, North Carolina. The school allowed the research team's professional landscape crew to permanently install all combinations of the test materials. Workers took great care to ensure that the joints between adjacent surfaces were "nonexistent or at least minimally detectable." Twenty-three legally blind people (14 men, 9 women) participated in the study. All were older than 18, with a mean age of 50 for the group, described as "independent and efficient travelers who primarily used the assistance of a long cane." Participants responded to differences that they could perceive with their own canes as well as through their usual walking shoes.

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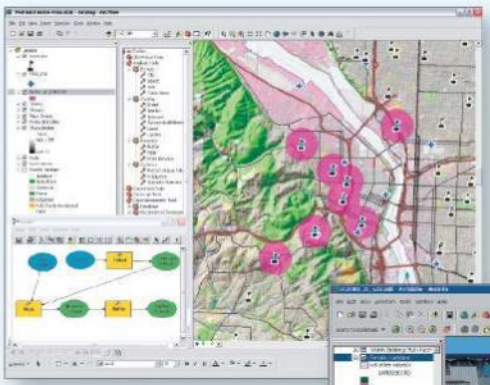

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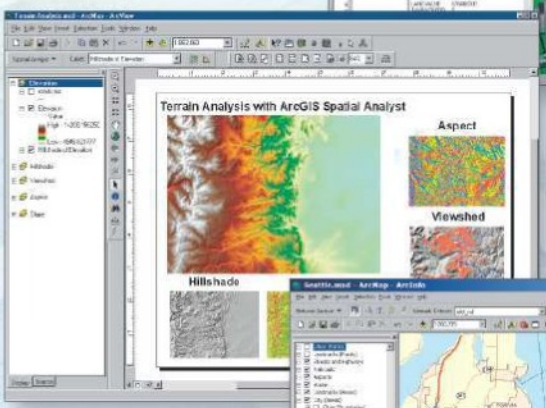

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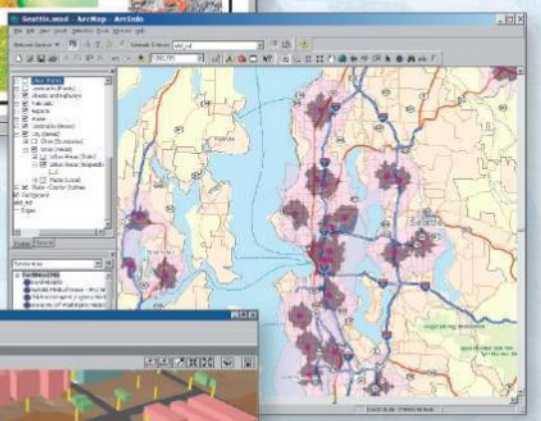

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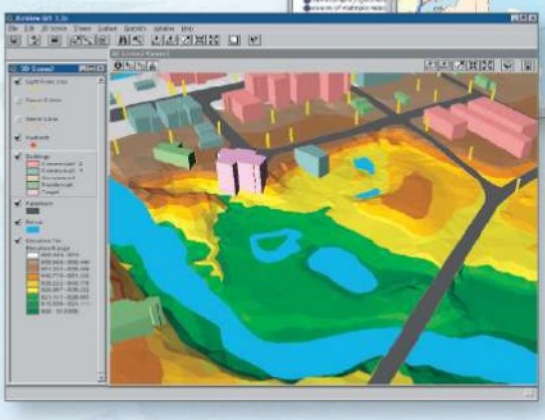

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The pairs of materials that most consistently communicated cues to participants were concrete and cobblestone, slate tile and nonslip grit, and concrete and slate tile. The participants had the most trouble discerning differences between square concrete pavers and brick pavers, square concrete pavers and cobblestones, stamped concrete and cobblestones, and slate tile and square concrete pavers. Nonslip grit was the material most reliably noticed as "different." Shoe type (tennis, casual, or dress) did not significantly influence the participants' abilities to differentiate between surface materials.

Source

■ "Spatial Knowledge Acquired by Visually Impaired Users Through Change in Footpath Materials," by Andrew Payne; in *Re: The Ethical Design of Places, Proceedings of the 40th Annual Conference of the Environmental Design Research Association, Kansas City, Missouri,* edited by Meldrena Chapin, Janice Bissell, Marie L'Heureux, Keith Diaz Moore, Mahbub Rashid, and Kent Spreckelmeyer; Edmond, Oklahoma: The Environmental Design Research Association, 2009.

Designing for Life Without Cars Nearby

To make car-restricted neighborhoods more desirable, specific features must be in place.

WHAT SORT OF urban design would convince people to live in neighborhoods where the use of cars was restricted? That's the question that Aloys Borgers and his colleagues set out to answer. The researchers distributed a written survey to collect information that residential designers and developers could use to design appealing neighborhoods in which residents cannot park near their homes. Although they conducted their study in the Netherlands, the researchers feel that the findings are relevant to American cities because an earlier study concluded that "most American developers perceive considerable market interest in developing more compact, pedestrian-friendly residential areas but are hampered by local regulations and their perception [that] lenders are unwilling to finance such developments."

Two hundred seventy-one people completed the surveys, which asked the participants to rate 27 different hypothetical neighborhoods. Each neighborhood represented a different combination of characteristics or options. The survey was designed so that respondents had to make trade-offs among the different sets of options, which fell into these key categories:

- distance between the neighborhood and the city center
- distance between home and public transportation
- distance from home to car parking (with parking potentially equipped with a security camera)
- opportunities for nonmotorized travel in the area
- features of routes for nonmotorized transport
- features of bicycle parking facilities near urban services

Based on the survey, the ideal neighborhood would be located no more than two kilometers from a city center and within 250 meters of a public transit stop. The neighborhood would offer secure parking less than 75 meters from home and provide a separate network of walking and biking routes that would not cross the main routes for motorized traffic. For those who use bicycles, these routes would offer secure, free bike parking.

The researchers summarized their overall results: "Most people prefer to live in non-car-restrained residential areas. However, it appeared that negative effects of concentrated parking facilities can be compensated for, at least partly, by providing secured parking facilities, good nonmotorized transport facilities, and access to public transport at a short distance from home."

With regard to nearby public transport stops (within 500 meters from home), the

authors acknowledge that "the options are limited, as supplying many stops would slow down the journey." They suggest that planners take a flexible approach, locating "car-restrained areas near public transport and nonrestrained areas elsewhere." Security cameras at large public parking lots and garages reduce the negative safety perceptions about them.

The results of this study clearly suggest that to make car-restricted neighborhoods more desirable, specific features must be in place.

Source

■ "Preferences for Car-Restrained Residential Areas," by Aloys Borgers, Danielle Snellen, Jos Poelman, and Harry Timmermans; *Journal of Urban Design,* vol. 13, no. 2, 2008.

What Design Features Can Boost Urban Greenway Use?

A LOT OF EFFORT is required to create urban greenways, and Greg Lindsey and his colleagues feel that designers still need to better understand which greenway features encourage or discourage their use. In a recent study, they set out primarily "to test whether trail characteristics, including characteristics of trail viewsheds, are associated with levels of trail use." They gathered data on approximately 33 miles of trails in six greenway corridors in Indianapolis to gauge whether, other factors being equal, daily trail traffic correlated with viewshed openness and interconnectedness, greenness, and the diversity of land use within them. The research also examined the influence of other trail features, including "surface, slope, sinuosity, segment length, and density of amenities [art, benches, and so on]." In all analyses the researchers used weather, season, day of week, neighborhood sociodemographics, and urban form as controls.

The researchers—Lindsey, Wilson, Yang, and Alexa—defined greenways as "linear open spaces or parks along rivers, streams, ridgelines, or historic infrastructure corridors such as canals or railroads that shape urban form and connect people with places." (They didn't define the physical dimensions or character of the viewsheds.)

The study recognized that greenways in urban areas provide opportunities not only for recreation and healthy physical activity but also for transportation.

The researchers examined viewshed openness and interconnectedness, defining openness as "the percentage of the half-mile buffer around each trail segment that a user would see [while] moving along the [trail] segment." "Interconnected" means that the view travelers see ahead is relatively consistent and unchanging, while less-interconnected viewsheds reveal more new sights as travelers progress along the path. Therefore, if a segment is less interconnected, travelers experience more mystery as they move forward or backward. Mystery can be a positive or negative factor, depending on whether the traveler imagines good or bad things waiting just out of view.

In addition, the researchers modeled the viewing experience of someone traveling along a trail using several variables:

- the "greenness" of each viewshed, which they calculated using a standardized measurement, the normalized difference vegetation index
- land-use diversity, computed with a GIS database and the Shannon Diversity Index, a mathematical tool used to measure diversity in categorical data
- trail sinuosity, a measure of the relative number of curving and straight sections and the average slope of each segment
- the relative length of the trail segment

that was paved, covered with gravel, or topped with a boardwalk

- amenities along the trail network, such as artworks, public phones, benches, and bathrooms, and their density along each trail segment

The researchers explained that the "number and type of intersections between trail segments and surrounding transportation networks [were] determined from the aerial photography and verified in the field. These include road and railroad intersections at grade, pedestrian bridges over water or land, pedestrian road underpasses, and bridges or underpasses where trail users must share the right-of-way with vehicular traffic."

The study documented that trail traffic was higher on weekends, during the summer and fall, and on warmer- and sunnier-than-average days. Neighborhoods with higher trail traffic were more densely populated and contained fewer residents at both ends of the age spectrum and fewer residents with higher median incomes. These high-use segments also included higher relative amounts of commercial land use and more parking. In addition, "longer block lengths in pedestrian access zones around [the infrared devices that monitored activity] are significantly correlated with higher levels of trail use."

Neighborhoods with higher trail traffic were more densely populated and contained fewer residents at both ends of the age spectrum.

The researchers' most important findings, however, were that higher trail use correlated with segments that

- have larger, more open viewsheds, providing frequent changes of scene
- are greener than the neighborhoods that surround them
- have greater land-use diversity within viewsheds
- possess greater mystery

The study found that trail use is lower on segments without paved surfaces, with rail crossings, and with long stretches of consistent views. Findings were inconclusive for the influences of curviness, slope, the density of grade-level road crossings, and the presence of amenities on trail use. LAM

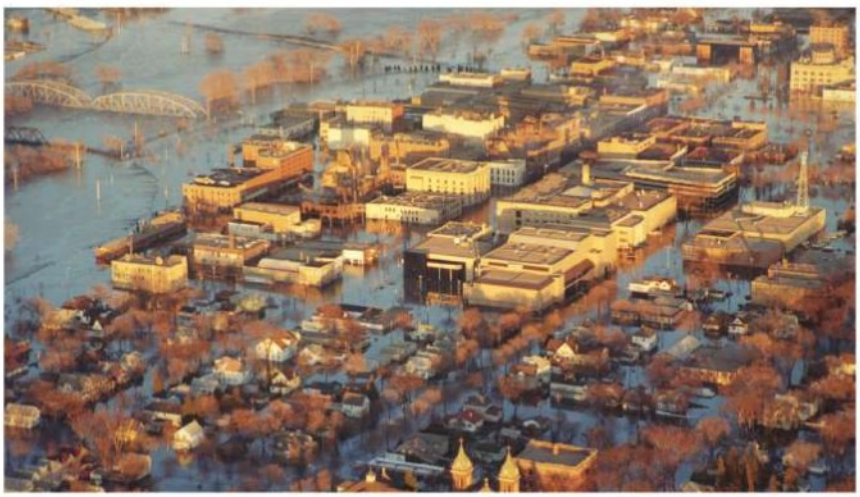
Source

"Urban Greenways, Trail Characteristics and Trail Use: Implications for Design," by Greg Lindsey, Jeff Wilson, Jihui Yang, and Christopher Alexa; *Journal of Urban Design,* vol. 13, 2008.

Sally Augustin, RDC's *senior editor, is an environmental psychologist. Jean Marie Cackowski-Campbell, ASLA, is the publisher of* RDC *and has an MLA degree from The Ohio State University.*

WHEN RIVERS RISE

Flood protection can be more than just levees and walls, as projects across the upper Midwest demonstrate. By Adam Regn Arvidson, ASLA



COURTESY DAMON FARBER ASSOCIATES. TOP AND BOTTOM: U.S. ARMY CORPS OF ENGINEERS, CENTER

THERE'S SOMETHING ABOUT homes buried to their eaves in water. Something that gets to us. We worry so much about controlling water—about keeping it out of our basements, out of our attics, out of our farm fields—that the sight of our neighborhoods overrun with it makes us sigh with compassion and disbelief. Some of the images never leave. Banda Aceh, Indonesia. New Orleans. Grand Forks.

In the winter of 1996–1997, nearly 100 inches of snow fell in the Red River Valley along the border between Minnesota and North Dakota. Between November and April, eight blizzards visited the region,

and the *Grand Forks Herald* began naming the storms like hurricanes. After the seventh one, the snow began to thaw and the river began to rise. Residents, students, and the National Guard began piling sandbags to increase the height of levees protecting Grand Forks, North Dakota, and East Grand Forks, Minnesota.

Then came Hannah: ice, 70-mile-per-hour winds, 100,000 people without power, and seven more inches of wet snow, which was soon melting and flowing toward the river. Evacuations were ordered. Ninety percent of Grand Forks and all of East Grand Forks were vacated. On April 18, water poured into the Lincoln Drive neighborhood, a leafy enclave encircled by an oxbow bend in the river, and the water quickly spread westward. Levees on the eastern side of the river were also breached.

JOHN STENNES, CENTER

In 1997 the towns of Grand Forks, North Dakota, and East Grand Forks, Minnesota, were flooded by the Red River, *above* and *opposite center*. When the cities subsequently improved their flood protection systems, they also created public amenities, including wide decorative gateways between downtown Grand Forks and the river basin, *top,* and Town Square, a park space between downtown and the river, *bottom.*

Then suddenly, the historic Security Building caught fire. Because of the floodwater, the fire was difficult to fight and took two days to contain, consuming 11 blocks of downtown Grand Forks. The image of burnt-out building shells standing hip deep in the escaped river was broadcast all over America.

But this isn't a story about a disaster; it's about what happened next. With the help of landscape architects from the Army Corps of Engineers and private firms, the Grand Forks region spent the next decade creating the Red River Greenway, a wide swath of green space that flanks the Red and Red Lake rivers for more than eight miles. The greenway is not only a recreational amenity providing more than 17 miles of trails, 2,200 acres of parkland, and a campground; it also manages floodwaters. Its

higher levees and walls can hold back large surges, and its wider floodplain allows the water to spread out over the open space.

Last spring, the Red River flooded again. The level of the river reached 49½ feet at Grand Forks—not much lower than the 54 feet it reached in 1997 (anything above 28 feet is considered flood stage). The next city upstream, Fargo, North Dakota, made national headlines for weeks as volunteers frantically sandbagged their levees in an attempt to stave off the fate that befell their neighbors a dozen years earlier. They succeeded, but it was touch and go. Meanwhile, Grand Forks simply closed up its floodgates and waited for the water to recede. Two weeks after the flood

The Red River Greenway, a bistate open space system, is a 2,200-acre recreational zone between the region's floodwalls and levees and the river itself. It flanks two rivers for more than eight miles and includes numerous amenities, including a campground, a golf course, pedestrian bridges, and neighborhood connections.

COURTESY CITY OF GRAND FORKS

crest, residents were biking the trails and playing golf in the floodplain.

This is flood protection as public amenity, and, according to Kevin S. Holden, ASLA, the Red River Greenway "is about the best example we have to date. It responds aesthetically; it responds functionally," he says. "It behaves as an amenity while doing the complicated work of flood control."

Holden is a leading landscape architect with the U.S. Army Corps of Engineers. It is impossible to talk about flooding without talking about the Corps. "We've been in the flood business for 100 years," he says. "Back then people weren't paying attention to the rivers themselves. Flood protection was just infrastructure. People didn't give a thought to the aesthetic side of it, or to the environmental issues either. Projects were approached in a single-discipline way, as functional flood protection."

In the 18 years he's spent with the Corps, Holden has seen that change dramatically. While he admits that the Corps itself never led that charge—credit there is due the communities—it is now a willing participant in considering ecology, recreation, urban design, and beauty alongside flood protection. And the Corps' perspective on flooding itself has changed, evidenced by a seemingly ever-transforming lingo. What used to be "flood protection" became "flood mitigation" and is now "flood risk reduction." This newest term seems to suggest less of the heavy hand the Corps is known for, in favor of the perspective that rivers will, in fact, flood, and that it's better that no homes are in the way.

Holden has been pushing, Corpswide, for what he calls "sustainable flood risk-reduction infrastructure," which is meant to consider, simultaneously, the needs of the Corps' flood management mandate and affected communities. He has some ability to push this idea, as he was recently named the Communities of Practice leader for landscape architecture. In the Corps structure, landscape architects (or any profession, for that matter) are not contained within any particular department but rather are scattered onto teams through the various offices. The Communities of Practice are, in essence, networks of similar professionals. Though there's no "head landscape architect" at the Corps, Holden is responsible for keeping them all talking and sharing and learning.

In the Town Square, a concrete obelisk commemorates historic flood levels. The devastating 1997 flood is the topmost line.

COURTESY DAMON FARBER ASSOCIATES

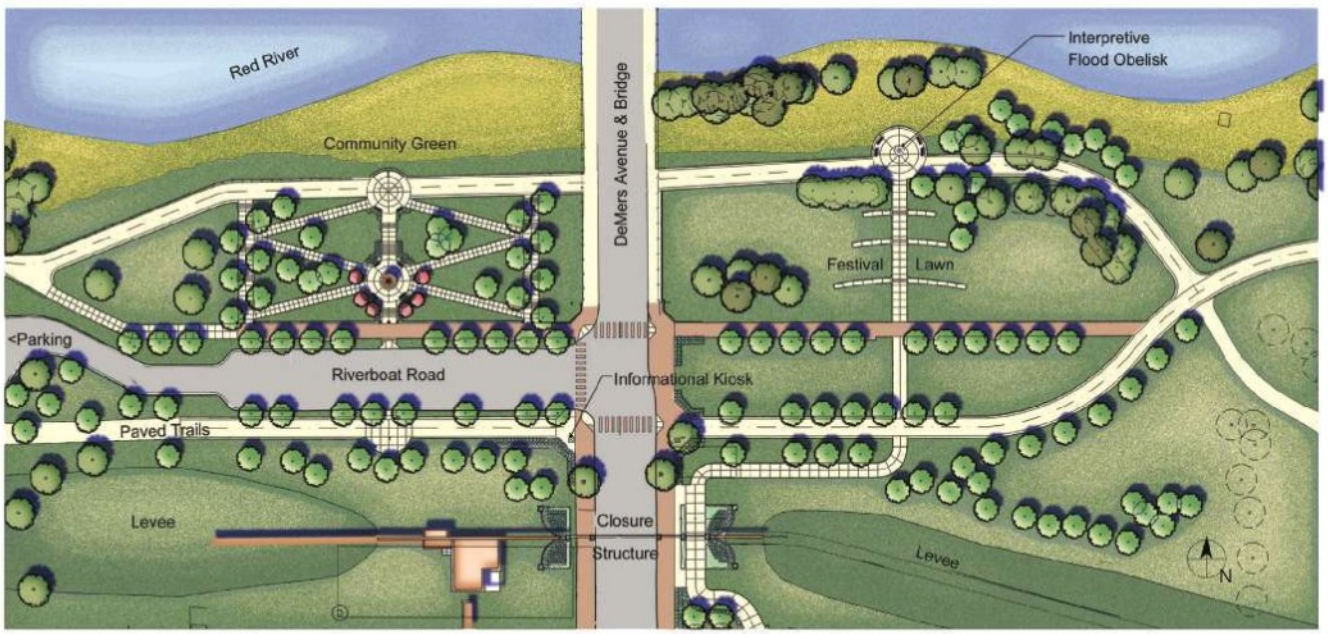
The Town Square, in the plan *below*, serves as Grand Forks' front door to the river. Though within the designated floodway, it has been transformed into usable space. It hosts festivals, *left*, and includes native vegetation at the river's edge.

Practically, sustainable flood risk reduction means creating a wider right-of-way for the river by pushing back the levees and clearing low-lying land that is very hard to protect. It also means integrating flood-control systems into the local context—the environmental context and the community context—by making it attractive, usable, and natural.

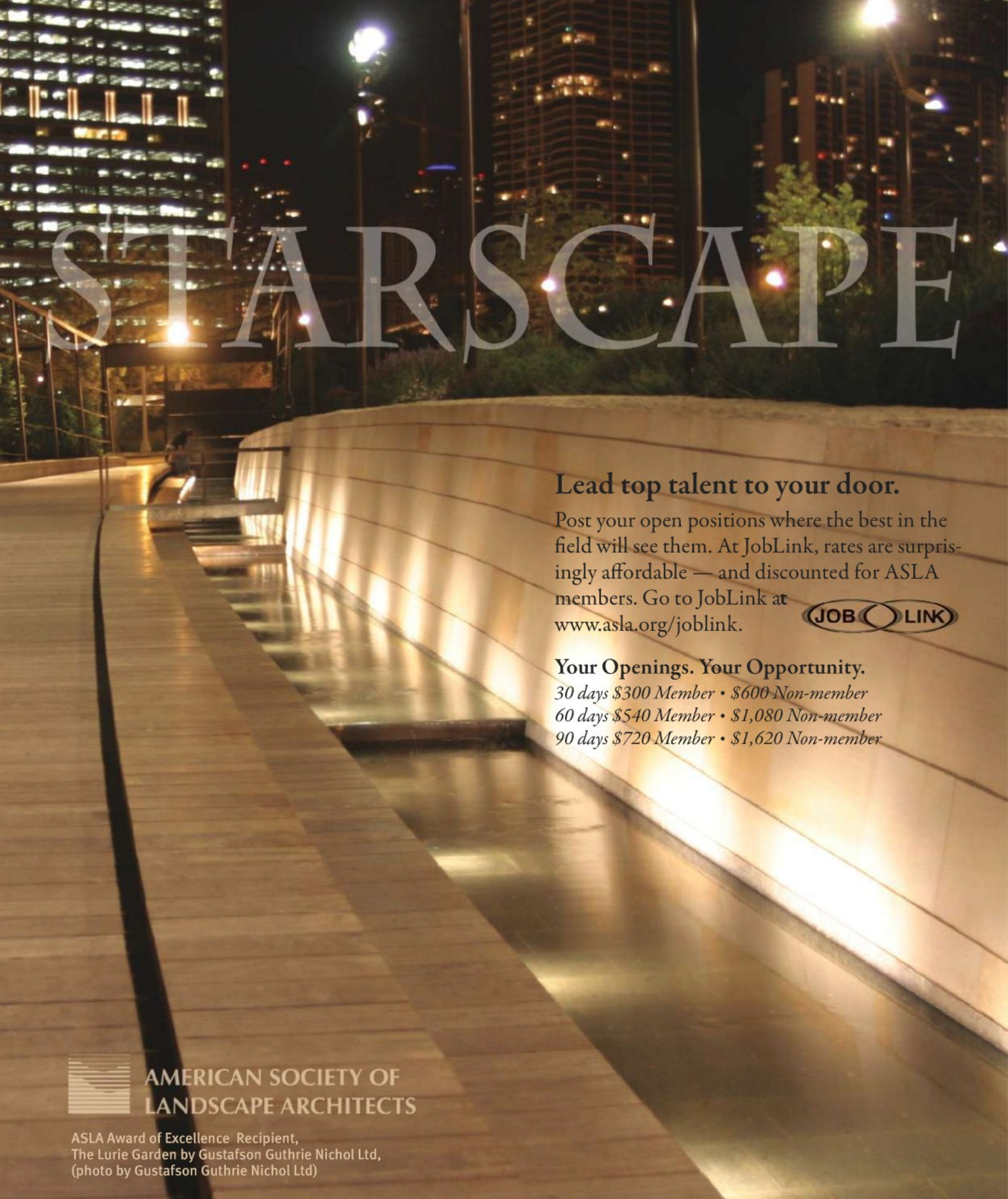
"When you're faced with areas that flood," Holden explains, "you have two choices: Protect the whole thing or move people to higher ground. Once you decide to protect it, that's when you get into talking about flood protection as a public amenity: a floodgate that doesn't look like a floodgate, a levee with openings in it so that it doesn't read as a barrier."

Most floodwalls block views of the water. In river towns across the upper Midwest, low-lying neighborhoods hunker down behind opaque concrete, cut off visually and physically from their natural amenities. In Grand Forks and East Grand Forks, most of the land is below flood stage. In East Grand Forks, the historic commercial district sits below the top of the levee, but it has perhaps the best example of a removable flood barrier. Most of the floodwall, approximately 11 vertical feet worth, is temporary. During normal conditions, views are completely open to the river; concrete columns exist at wide intervals. This allows a line of restaurants and bars to have views of the floodplain and the city of Grand Forks across the river. When the river rises, the city quickly installs a complex system of metal posts, struts, and planks to hold back the water.

The Red River Greenway is full of examples like this, and that is testament to a tenacious community, several different Corps landscape architects, and at least three private firms. That story begins almost immediately on the heels of the 1997 flood, when the Corps stepped in to raise the levees. According to Tom Whitlock, ASLA, of Damon Farber Associates (DFA) in



COURTESY DAMON FARBER ASSOCIATES



ASLA Award of Excellence Recipient,
The Lurie Garden by Gustafson Guthrie Nichol Ltd,
(photo by Gustafson Guthrie Nichol Ltd)

Minneapolis, who has been involved in the project from early on, the region was offered $100 million in federal dollars for the project. It flatly refused the money, mainly because those initial plans would have been then Corps-standard higher walls or a diversion channel. Two states, two counties, several cities, and two state departments of natural resources came together with the Corps to instead envision a much larger project and eventually secured more than $400 million from a combination of federal, state, and local sources. This allowed for extensive amenities to be implemented.

The initial master plan was created by North Carolina-based landscape architecture and planning firm Greenways Inc. with Minneapolis landscape architect and park planner Greg Ingraham, ASLA. As the Corps began to design and implement that greenway, it brought on DFA in 2000 to help it meet the scope and speed of the project. The overarching ideal, according to Melanie Parvey, an environmental compliance officer with the city of Grand Forks who was the greenway coordinator from 2000 to 2006,

One of the flood protection innovations in the region is the removable floodwall between downtown East Grand Forks and the river. The flood protection level is at the top of the large columns in the photo *above*. When the river rises, a system of metal posts and beams is installed, *top*. This design allows the views to remain unobstructed most of the time, *above*.

ADAM REGN ARVIDSON, ASLA. TREELINE

Innovations in Flood Risk Reduction

AS COMMUNITIES AND THE CORPS move away from the previous standard of turfgrass-clad earthen dikes on the river's edge, new ideas are being tested.

NATIVE VEGETATION In places where uniformly graded floodway slopes come right down to the water, those slopes are most often hard armored, with riprap to protect against the severe scour that occurs during floods. Tom Whitlock, ASLA, of Damon Farber Associates, remembers Grand Forks officials and citizens wanting something different. "They wanted the whole shoreline natural," he says. "They didn't want to riprap the edge." So at Town Square, Whitlock designed a slope that is armored with geotextile fabric and native plants. Grasses and forbs were set into holes cut in the Enkamat, which looks a bit like a tangled fishing net. Two different mixes were then seeded into the mat, and the whole section was covered with two inches of soil and a temporary erosion-control blanket.

At Harriet Island Regional Park in Saint Paul, Minnesota, which sits in the Mississippi River floodplain, SRF Consulting Group and Baird Engineering designed "soil-filled riprap" on the river edge. This type of armoring combines rock and soil and allows for seeding of plants between the stones. In both Grand Forks and Saint Paul, these river slopes do look different than typical levees, but it has proven difficult to keep invasives out of the mix. Every time the river floods, new seeds get deposited into the fertile soil. Managers are still working out exactly how to maintain these slopes aesthetically, but they are proving to be effective at erosion control.

REMOVABLE FLOODWALLS Wherever roads, railroads, and pathways pass through floodwalls and levees, temporary closures need to be designed. In essence, a temporary closure is a gap in the flood protection that can be filled by stacked metal planks when the waters begin to rise. In East Grand Forks, temporary closures go to great lengths to keep the entire downtown open to the river. The flood protection wall there, designed by Minneapolis-based landscape architecture and engineering firm SEH Inc., usually looks more like an opening than a wall, with only a low curb and widely spaced ornamental columns hinting at its existence. In the event of a flood, additional metal posts are installed and braced from behind with metal struts, then the metal planks are slid in. The design allows the downtown entertainment strip, a group of two-story restaurants with decks overlooking the river, to keep its views. (Unfortunately, the town is a ways back from the river and there is a large surface parking lot just on the other side of the floodwall, but it would be far worse if that wall were not temporary.)

RIVERSIDE STORMWATER PONDS Grand Forks used the flood protection improvement project to upgrade its stormwater management system for the benefit of both the neighborhoods and the river. Two new stormwater ponds were constructed between the floodwall and the river. Storm sewer pipes run under the walls to bring water to these large basins, which are currently being colonized by floodplain vegetation (grasses and trees) and various types of waterfowl. Though the technology of these ponds isn't particularly groundbreaking, they do simulate a natural aspect of the floodplain, namely the oxbow lake, an important habitat and water retention feature of a river system. By placing stormwater ponds on the river side of the flood protection, Grand Forks was able to simultaneously improve the quality of urban runoff entering the river and further restore the Red River's natural floodway. Check valves prevent floodwaters from backing up through the sewer and inundating neighborhoods.

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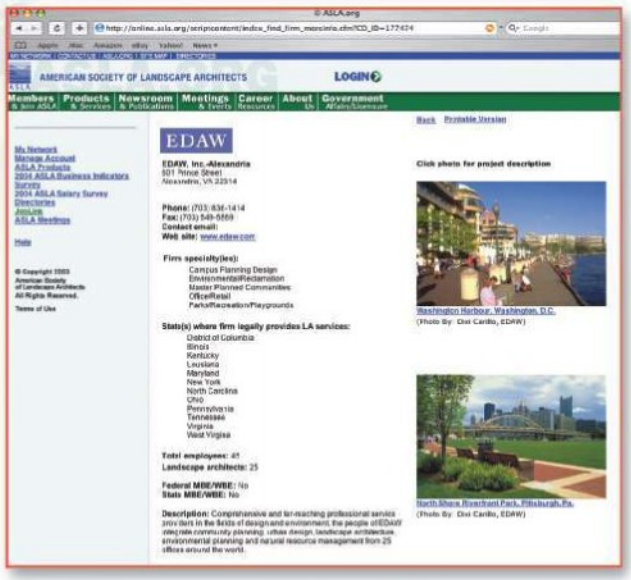

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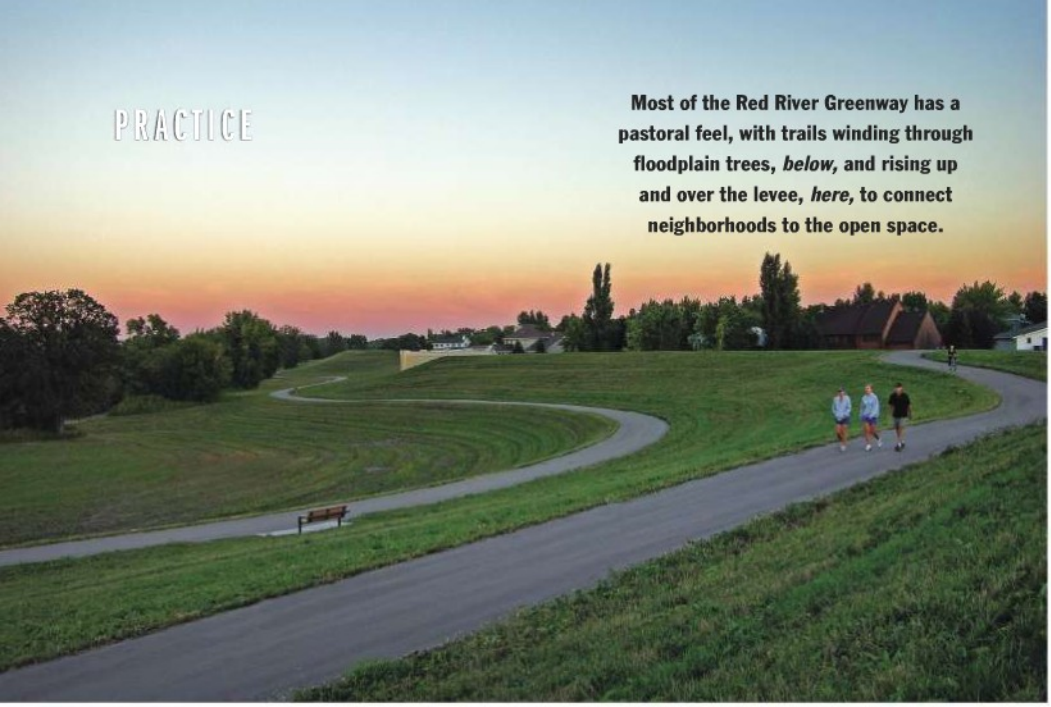


Most of the Red River Greenway has a pastoral feel, with trails winding through floodplain trees, *below,* and rising up and over the levee, *here,* to connect neighborhoods to the open space.

was to create one seamless composition. "People don't know," she says, "what side of the river they're on."

On a beautiful day last spring, Parvey biked the trails she helped realize, wandering back and forth across the river and slipping through levee openings into the riverside neighborhoods. The flood that had filled the greenway mere months earlier was a ghost. It was expressed only in a few bent railings, some caked silt on the lowest elevation trails, small piles of branches at bridge piers, and a few snapped trees (which were already being replaced).

The Red River is not conventionally beautiful—it's brown and flanked by a thin hedgerow of twisted cottonwood and ash. Muddy banks rise up to exposed tortured tree roots. The ride along the greenway is exceptional, though. The greenway's trails (14 feet wide on the Grand Forks side) undulate lazily through golf courses, restored natural areas, and open grassy parklands as they rise and fall gently with the intricacies of the floodplain. In all but the Town Square, a formal event space between downtown Grand Forks and the river, the landscape is decidedly pastoral, owing to the visual absence of buildings: They are hidden away behind the levee and floodwall.

Design wise, there's little that's groundbreaking here. It's a city park on a grand scale, with ample but unremarkable seating, picnic pavilions, form-liner concrete walls, and colored concrete at the neighborhood entrances. It is consistent, though, which is a testament to the master plan and its faithful implementation. And more than that, says Parvey, it has changed perceptions of the river and the community itself.

"In addition to being a good recreational resource," she says, "it has also reconnected communities to [that resource]." That has a lot to do with the levee pass-throughs (breaks in the wall that are typically open and can be closed when waters rise) or up-and-overs (pathways that ascend one side of the levee and descend the other) that occur every quarter mile. The greenway also offers previously unavailable access to the river. There are two new boat ramps (implemented with the collaboration of the North Dakota Game and Fish Department) and trails that run low on the bank, mere feet from the river.

In the other corner of Minnesota, Rochester has flooding problems for exactly the opposite reason as Grand Forks. While the latter is in danger from a river that flows north and gets backed up by ice jams, Rochester's Zumbro River is hemmed in by bluffs, making flash floods the major concern. Doris Sullivan, FASLA, a landscape architect with the Saint Paul District of the Corps, describes the flood mitigation project there as "one of the early elaborate projects" that included a significant amount of public amenity.

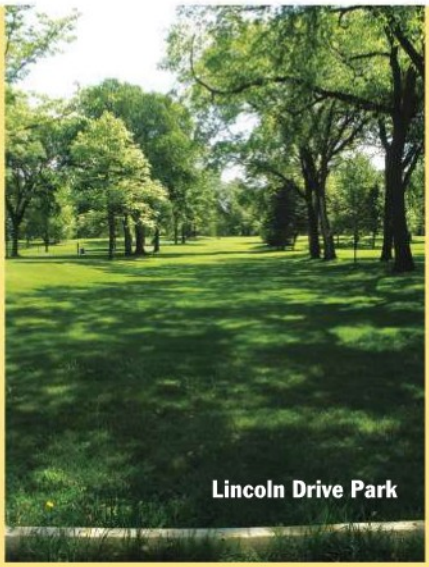
The so-called South Fork Zumbro River Flood Control Project has seven and a half miles of trails, some of them decidedly urban where the river runs through downtown and around the civic center. Water's-edge platforms for fishing, pedestrian-only bridges across the river, and custom railings can be seen throughout. Revised water control weirs are designed to be safer

COURTESY DAMON FARBER ASSOCIATES

Old Neighborhoods, New Parks

ONE OF THE MORE DIFFICULT design issues for landscape architects working on flood mitigation projects is what to do with land that was previously occupied. One of the largest such zones in the Grand Forks area was the Lincoln Drive neighborhood. This low-lying residential enclave was almost completely surrounded by a bend in the river and was the first place to flood in 1997. Today, the land looks like a park—but things are a little more complex than that.

"One of the main challenges at Lincoln Drive," remembers Tom Whitlock, ASLA, of Damon Farber Associates, who designed the park, "was that because the Federal Emergency Management Agency (FEMA) bought all the residential properties, we could not develop a park on any of that land. We had a hard time even putting any trails there." FEMA has specific rules about what can happen on land that it buys out as a result of river flooding—namely that there can be no impervious surfacing.



In Lincoln Drive, however, a public school was also removed, so Whitlock designed parking, two picnic pavilions (designed to match a Corps-designed restroom building/warming house), and a memorial plaza, all nestled against the back of the new levee, which cuts across the neck of the little peninsula on which the neighborhood sat. The school site could be developed as such (with impervious paving) because it was city owned and was never purchased by FEMA. The rest of the site is a pastoral, grassy landscape—a sort of borrowed open space that is open to the public but technically a flood protection area, not a park. Many of the old roads have been removed, but the street trees remain, giving a glimpse of the former structure of the neighborhood. Whitlock remembers long discussions about whether to restore that area to prairie, but it was eventually decided that a turfgrass landscape would serve as a more appropriate memorial, since it references the manicured lawns of the old neighborhood. The former neighborhood is also remembered with a brick paver map that provides a key to the old streets and a flag that flies on the school's old flagpole—now at the center of the parking lot.

On the other side of the river in East Grand Forks, a neighborhood just north of downtown was cleared of homes and turned into a campground that is part of Minnesota's Red River State Recreation Area. It uses the old roads as vehicular circulation routes and trails, and some of the sidewalks are still in place. Former Greenway Coordinator Melanie Parvey says that at one point there was a suggestion to use the old addresses as campsite numbers, but project managers (thankfully) thought that might be going too far.

Lincoln Drive Park occupies the site of a former neighborhood. The ghosts of streets, flanked by former street trees, are still visible, *top*. Because of FEMA rules, no impervious surface could be built where the homes had been, so the designers clustered parking and other hard-surface amenities on a former elementary school site owned by the city and left the rest a grassy open space, *left*.

ADAM REGN ARVIDSON, ASLA. TREELINE. TOP: COURTESY DAMON FARBER ASSOCIATES. BOTTOM

and more aesthetically pleasing. New boulder riffles and deep pools in the river improve habitat. A clean-water discharge from the well-known Mayo Clinic was transformed into a decorative waterfall flanked by public art. Construction began in 1987 and was completed in 1995, with DFA performing detailed design and construction plans.

In addition to her involvement in Rochester, Sullivan also prepared early design sketches for flood protection in Minnesota's capital city. This three-mile project across the river from downtown Saint Paul was also completed in 1995 and was designed and detailed completely in-house by six different Corps landscape architects. It consists of two very different sections: a narrow, hard-surfaced multilevel walkway and a grassy levee that runs around behind Harriet Island Regional Park, which was renovated by the city of Saint Paul in 1999. The hard-surface section is the most notable, as it very creatively breaks up the

The Red River Greenway is considered the best example of flood protection as community amenity. The flood levees and walls have architectural detailing and openings to allow pedestrians through, *below;* the building is a pump house associated with the floodwall. Two pedestrian bridges, one seen *here,* erase the boundaries between the two states that share the greenway.

hulking floodwall. Inclines, raised and sunken plazas, stairways, and multilevel promenades make for a varied user experience. Patterned concrete warms and softens the walls, while varying textures and colors of concrete add richness to the paved surface.

Each of these projects is a long way from what the larger design community might expect from the Corps. The Corps landscape architects interviewed for this article, however, bristle at the stereotype that they're anti-nature or engineering dominated. "We really try not to ruin things," says Sullivan. "We try to enhance them." Parvey was forthright in her praise of the Corps staff, who, she says, spent a lot of time in Grand Forks, even becoming regulars at local restaurants.

It must be noted, however, that currently, in northwestern Minnesota, the Corps is building a diversion channel around the city of Roseau: essentially a grassy ditch through the surrounding farmland, partially paid for with federal stimulus money. It also recently proposed three options to the public for mitigating Fargo's flood issues: a diversion channel through Minnesota, a diversion channel through North Dakota, or higher walls downtown. None of these cases show much visionary thinking.

And the money that the Corps brings to a community has some specific strings attached. Aesthetic treatments of things that would be built anyway (basic landscape plantings, textured floodwalls) are paid 65 percent by the Corps. Recreational features like bridges and trails are paid at 50 percent, up to 10 percent of the total project cost. The remaining cash has to come from the community.

So there's a lot riding on local gumption. Parvey remembers that when East Grand Forks proposed the temporary floodwall to provide views of the river from its downtown, the Corps was not going to certify it, which would have had a severe impact on flood mapping and insurance. The community pushed and pushed and the Corps finally relented. "There's a lot of tradition in flood protection design," says the Corps' Holden. "We have great engineers, but they aren't trained in aesthetics. I haven't worked with anybody [here at the Corps] who doesn't care about the project and the public. Their only limitation is their professional experience." To remedy this, Holden would like to see landscape architects in every Corps district where major designs are generated. "Every Corps office has civil engineers who spend at least some of their time doing things that landscape architects can do," he says.

And as for the Corps' progress on sustainable flood risk reduction? "We need continuous improvement," says Holden. "The next Grand Forks maybe could go further with nonstructural solutions." Nonstructural solutions means protecting buildings by not having the buildings around anymore. That means either preventing encroachment into flood-prone land (something that's mostly standard practice now) or moving people out of the floodplain—buying their waterlogged or flood-threatened houses, tearing them down, and designating entire neighborhoods part of the flood zone. This is the most controversial aspect of flood

COURTESY DAMON FARBER ASSOCIATES

mitigation, both along rivers and at the oceanside.

The cities of Grand Forks and East Grand Forks partnered with the Federal Emergency Management Agency (FEMA) to remove more than 500 homes and create parks in their stead (see "Old Neighborhoods, New Parks," page 87). But not every city can afford to do that (it is the cities that have to pursue the eminent domain cases and assist with management of the purchases). Moving levees back, therefore, a key provision of sustainable flood risk reduction, becomes a cost issue, dependent on city willingness and political ability and FEMA funding. "Sometimes the ultimate solution," admits Holden, "is not within the economic grasp of the [community]."

The problem is that Grand Forks, along with most Corps projects, is still reactive, rather than proactive. Iowa was slammed with flooding in the spring of 2008. Des Moines has projects under construction, designed by Wallace Roberts and Todd, to raise its flood protection and provide more amenities. Cedar Rapids is working on a master plan by Sasaki Associates that would move flood protection back, restore natural floodplain, and remove homes from the floodway. These promise to be great projects, but they were still triggered by floods instead of anticipating them.

Flooding problems will likely continue to worsen. Grand Forks has seen three 100-year floods in 12 years. Increased impervious surface in the watershed, the possibility of more erratic precipitation caused by global climate change, and the continued removal of natural farmland buffers could all increase the amount of water entering rivers. If the Corps is serious about protecting cities, it will need to financially help those cities clear flood-prone land in advance, and it will need to better address entire watersheds. To go a level higher, the Corps is a branch of the army and could receive new orders from the president. Yes, these new initiatives will cost money, but so does the National Guard sandbagging levees.

Adding recreational amenities to flood mitigation projects costs extra money too. In the wake of the 1997 flood and fire, Grand Forks was understandably overwhelmed, and Parvey, who was studying at the University of North Dakota that spring, remembers difficult discussions about how to use the floodplain. "When we talked about recreation and access to neighborhoods, I was surprised at how much resistance there was," she says. "People said 'How can we talk about spending money on something that isn't a necessity?' Now I don't think you'd have anyone say we shouldn't have spent $20 million for this recreation system out of [the approximately] $400 million project." LAM

Adam Regn Arvidson, ASLA, is a regular contributor to Landscape Architecture *and founder of Treeline, a design/writing consultancy in Minneapolis.*

Principles of Sustainable Flood Risk Reduction

KEVIN S. HOLDEN, ASLA, a landscape architect with the U.S. Army Corps of Engineers, is working to make flood risk reduction projects more sustainable—for communities, for the environment, and for the Corps. Here are the two key principles:

WIDE FLOOD PROTECTION RIGHT-OF-WAY. When new levees and floodwalls are built, they should be moved farther back from the river. This has the effect of creating a wider floodplain within which the river can spread out, and it also opens opportunities for natural restoration of those floodplains. Creating a wide right-of-way is what Holden calls a "nonstructural solution," which essentially means keeping (or making) more floodway areas building free. It takes communities and the Corps out of the business of protecting neighborhoods built on marginal land and generally simplifies the alignment of levees, which no longer need to twist and turn to follow a convoluted river. The bonus is that these straighter, set-back levees are easier to maintain, because access is possible from both sides.

COMMUNITY AMENITIES. Once the floodplain has been widened, there are ample opportunities for recreation. Former Grand Forks Greenway Coordinator Melanie Parvey remembers the Corps and design consultants saying they needed space for the water anyway, so they might as well put it to good use. Such use can include trails, festival grounds, campgrounds, golf courses, and anything else that can take some inundation from time to time. Holden feels that flood protection should also look good. Floodwalls can look more ornamental than functional, and they can include temporary closures that stay open most of the time and provide views. Currently, the Corps doesn't pay for this stuff, though, so, says Holden, "the best projects are when the Corps is dedicated to a multidimensional project, but the community is behind it, too."

Though it might seem counterintuitive, the designers felt that the flood protection should be permeable, allowing, for instance, connection between downtown Grand Forks and the river. This is not, however, the norm with flood protection projects—even those being built today.

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ASLA Honor Award Recipient, Woody Creek Garden by Design Workshop, Inc., (photo by D.A. Horchner/Design Workshop)

LAWRENCE HALPRIN COLLECTION. THE ARCHITECTURAL ARCHIVES. UNIVERSITY OF PENNSYLVANIA

Lawrence Halprin

1916-2009

Remembering one of America's greatest landscape architects.

LAWRENCE HALPRIN revolutionized landscape architecture more than once. Early in his career, Halprin was among a small group of Californians who reimagined the residential garden using modern forms and materials to create rooms for outdoor living. In the early 1960s, Lawrence Halprin & Associates was one of the first firms to experiment with ecological planning. And its design for the FDR Memorial—laid out in the early 1970s—broke with the tradition of commemorating great leaders with monuments, creating an experiential landscape instead.

However, Halprin and the firm that bore his name will be forever remembered for their pioneering work in cities. At a time when most architects and planners felt renewal was only possible through the bulldozer, Ghirardelli Square—the adaptive reuse of an old factory in San Francisco—showed the potential of repurposing the existing fabric. The firm's design for Lovejoy Plaza helped spark a renewed interest in plazas and public fountains throughout the United States, and Halprin's call to thoughtfully integrate freeways within the city found form in a number of projects, most notably Seattle's Freeway Park.

Halprin was never a lone artist. Collaboration both inside and outside the office—providing talented young designers with opportunities to develop new ideas—is part of what made his firm's work so innovative. Halprin's interest in facilitating "collective creativity" extended to the public itself. At a time when many were lukewarm or outright hostile to the idea of public participation in the planning process, Halprin developed creative workshops that brought communities together toward a common goal.

To write a single article describing all of Halprin's contributions is, frankly, impossible. On the following pages, we've listed some of the highlights of his life, interspersed with quotes from past issues of *Landscape Architecture,* Halprin's books, and other sources that have documented his career. In the coming month, we encourage our readers to share their own memories of Halprin, his work, and his impact on the field of landscape architecture, and we'll print as many of those responses as we can.

By Daniel Jost, ASLA

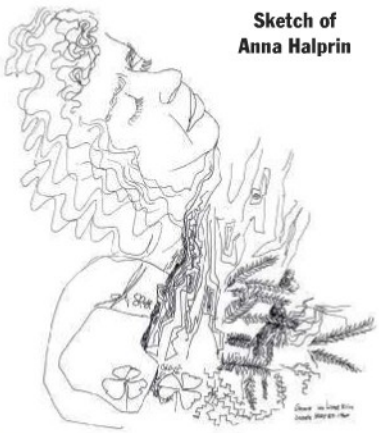
JULY 1, 1916: Lawrence Halprin is born in the Bronx and grows up in Brooklyn. His father is the president of a scientific instruments company, and his mother is a leading Zionist.

1933–1935: Halprin assists in the founding of a kibbutz in what was then Palestine.

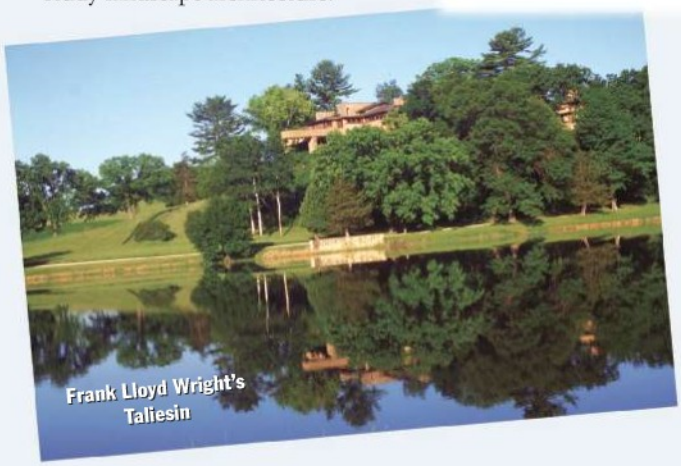
1935–1939: After two years of experiencing communal living and working in a variety of jobs, he returns to the United States, hoping to gain the technical skills necessary to farm in the desert. Halprin enrolls at Cornell University's School of Agriculture, where he earns a bachelor's degree in plant science and learns about ecology.

1940: While working on his master's degree in horticulture at the University of Wisconsin, he meets Anna Shuman, a dancer, and they marry. They will both become innovators in their respective fields and will often cite each other as influences.

1940: After visiting Frank Lloyd Wright's Taliesin and reading Christopher Tunnard's *Gardens in the Modern Landscape,* Halprin decides to study landscape architecture.



Sketch of Anna Halprin



Frank Lloyd Wright's Taliesin

1942: He receives a scholarship to Harvard's Graduate School of Design where he studies under leading modernists including Walter Gropius, Tunnard, and Laszlo Moholy Nagy. His classmates include architects I. M. Pei, Paul Rudolph, and Phillip Johnson. Gropius, who founded the Bauhaus in Germany, has a particularly strong influence on Halprin.

"[Studying under Gropius], I soon appreciated the basic idea of the Bauhaus: that the arts were not segmented."

—Halprin in *Inner Landscapes,* a documentary produced by KQED San Francisco in 1991

DECEMBER 1943–APRIL 1945: Halprin enlists in the Navy during World War II and serves in the Pacific theater. In April 1945, a kamikaze plane sinks his destroyer during the invasion of Okinawa, and he is sent back to San Francisco on survivor's leave.

1945–1949: Thomas Church hires Halprin to work at his office in San Francisco, where he is among a small group of landscape architects who redefine the residential garden in California.

1948: Halprin collaborates on the design of the Dewey Donnell Garden, one of Thomas Church's signature projects. Its biomorphic curves—including a kidney-shaped pool—are featured prominently in Church's book *Gardens Are for People,* published in 1955.

SEPTEMBER 1949: Halprin starts his own firm—Lawrence Halprin—in San Francisco. Its primary focus is suburban gardens, but it soon receives commissions for hospitals, universities, shopping centers, and housing developments. Within the next few years, he hires Jean Walton, Donald Carter, Satoru "Sat" Nishita, and Richard "Vigie" Vignolo, ASLA, who would later become his principal partners in Lawrence Halprin & Associates.

1951: The Caygill Garden, a residential landscape in Orinda, California, the first of Halprin's designs to include a fountain is completed.

"I draw just for drawing—like breathing."

—Halprin in "Master Collaborator," by J. William Thompson, FASLA, *Landscape Architecture,* July 1992

Self-portrait during World War II

1952: The Halprin family moves to a new house in Kentfield, California, near the base of Mount Tamalpais. On this four-acre property, Halprin designs a series of choreographed spaces that lead to the Dance Deck, a performance space designed for his wife, Anna, that plays an important role in her evolution as a dancer and, later, the development of their workshops.

LAWRENCE HALPRIN COLLECTION, THE ARCHITECTURAL ARCHIVES, UNIVERSITY OF PENNSYLVANIA. TOP AND BOTTOM RIGHT: © PEDRO E. GUERRERO. COURTESY TALIESIN PRESERVATION INC., BOTTOM LEFT

Halprin residence

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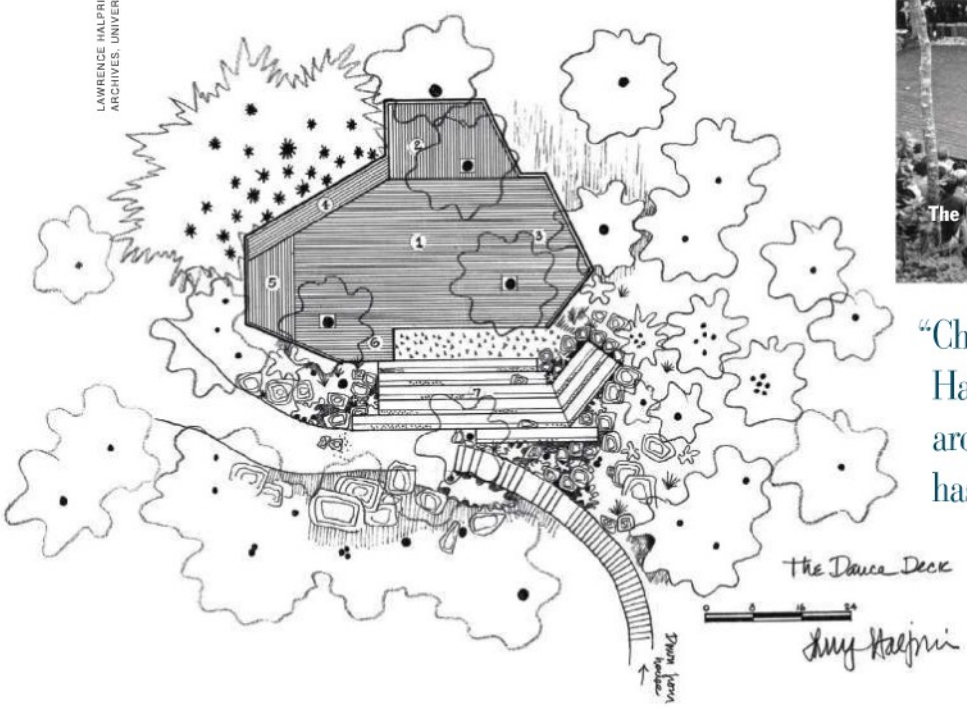
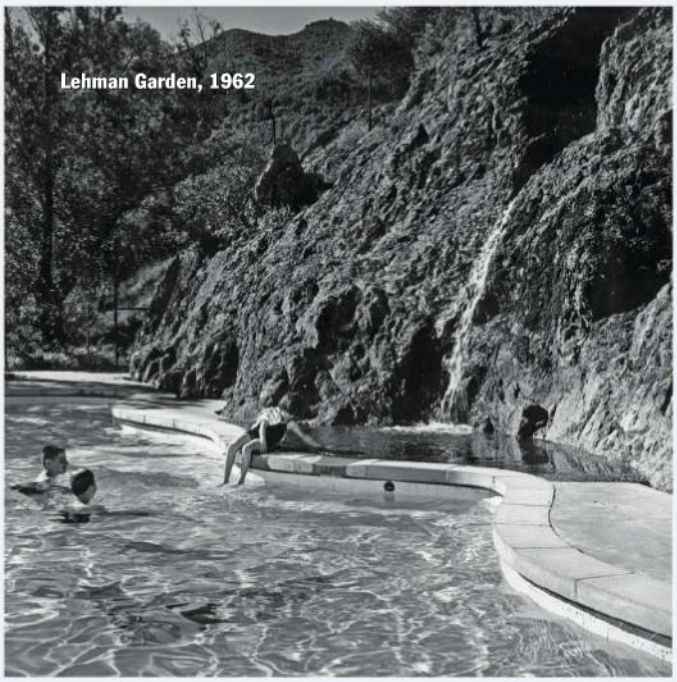
The Dance Deck



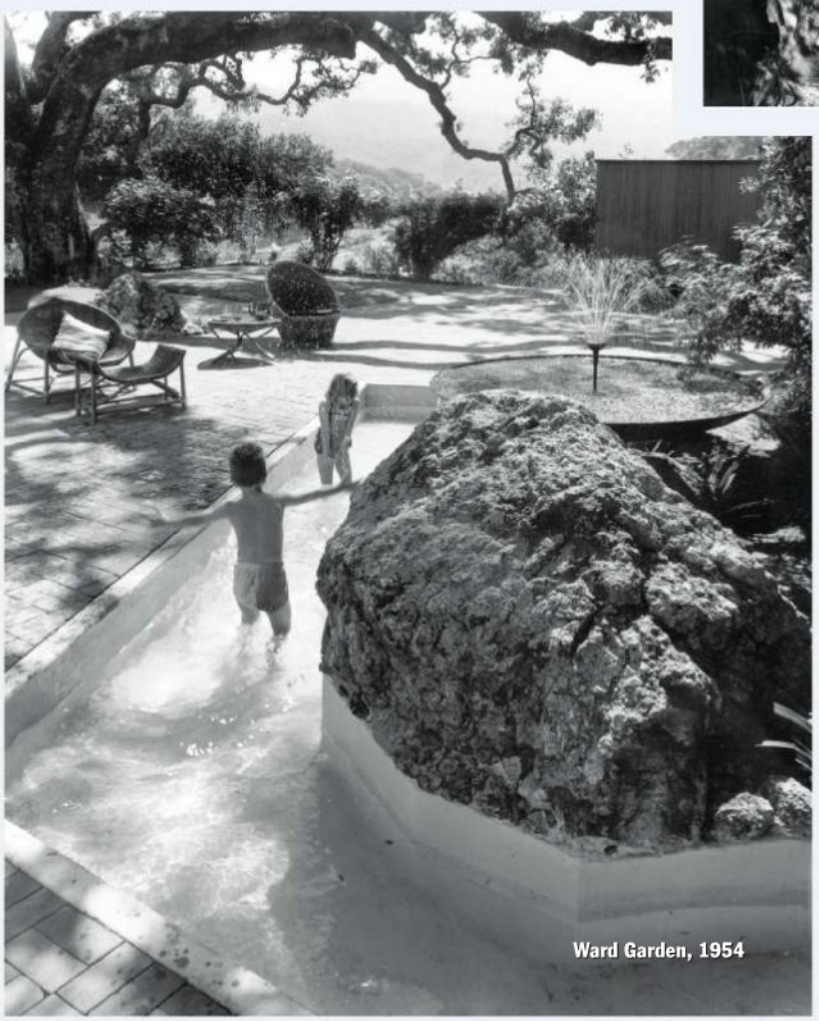
"Choreography of space is central to Halprin's approach to landscape architecture; no other landscape architect has thought as deeply about designing for the way people move through a site."

—J. William Thompson, FASLA, in "The Power of Place," *Landscape Architecture*, July 1997



Lehman Garden, 1962

Caygill Garden, 1951



Ward Garden, 1954

"The scale at the beginning was small, but the ideas were large and very advanced for their time, embodying a whole new approach to environmental design.... Our gardens were to reflect our lifestyle: places meant not only for contemplation but activity, designed not for perfection and fixity, as in the Oriental tradition, but for changeability and responsiveness to people's changing needs."

—Halprin in "Riding a Revolution," by Nilo Lindgren, *Landscape Architecture*, July 1974

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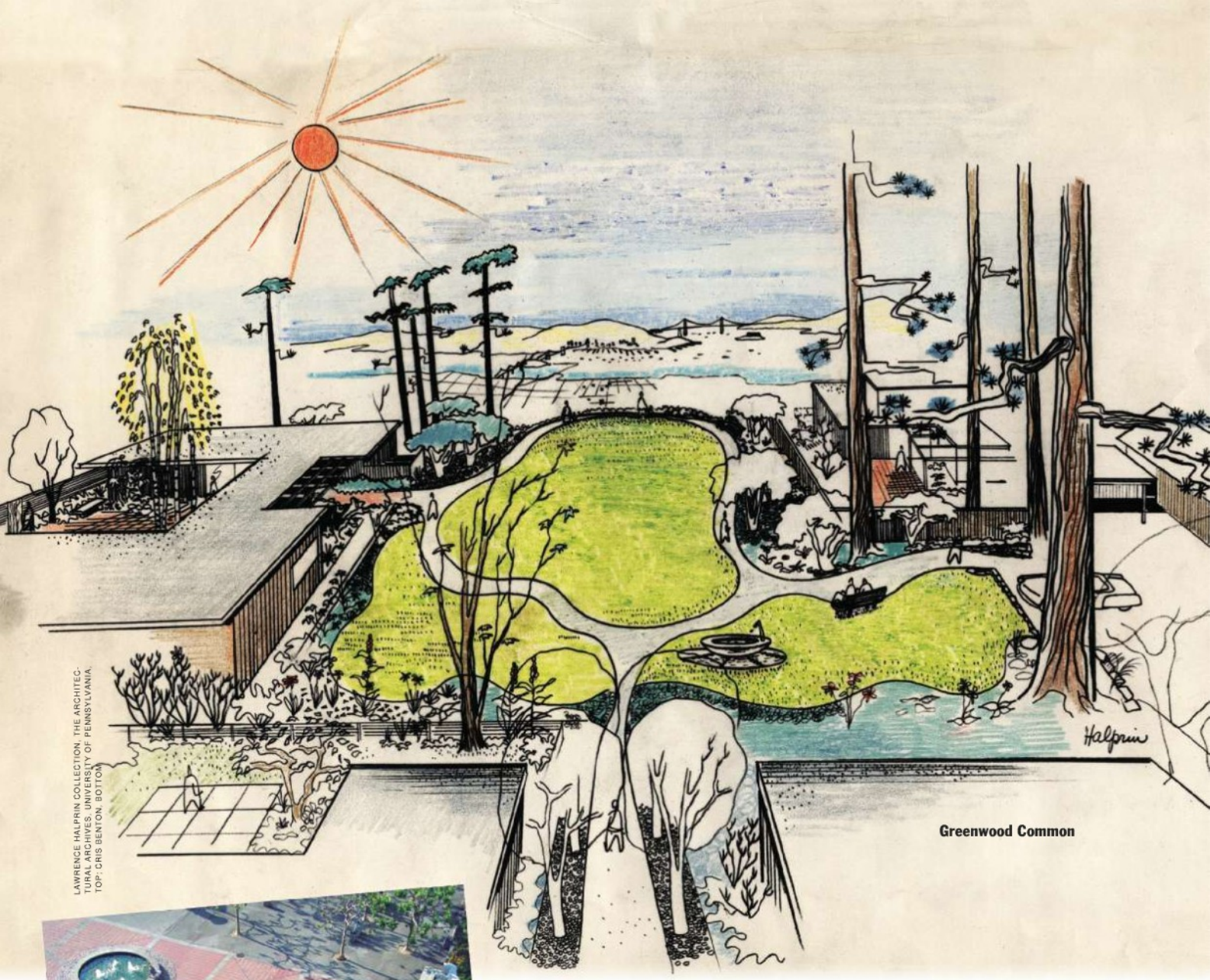
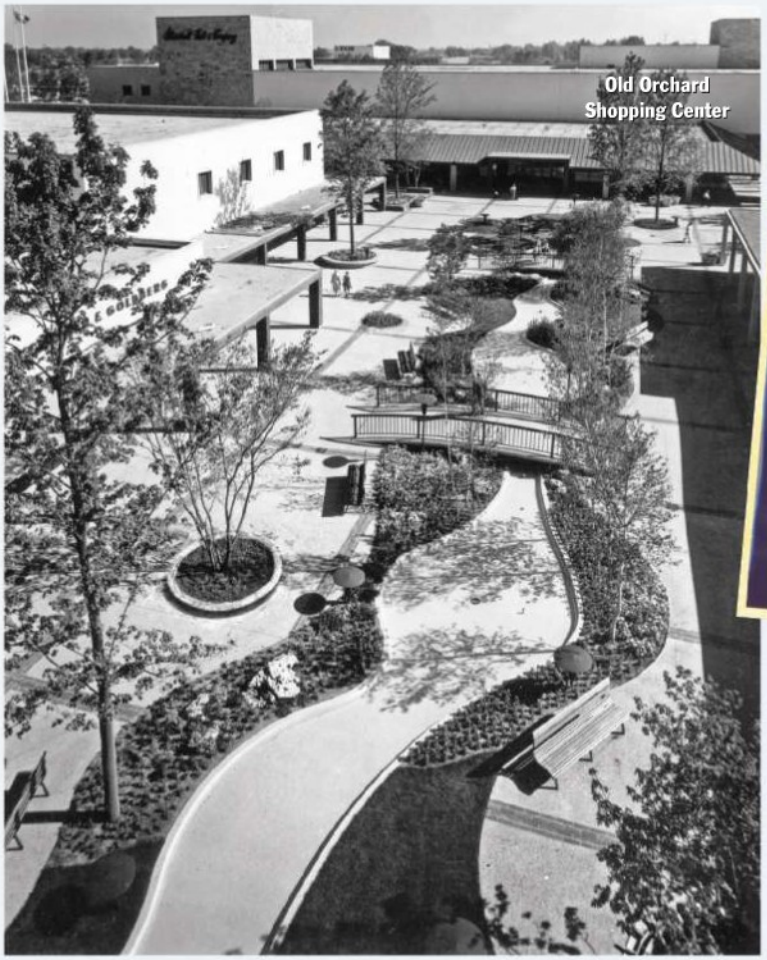


Greenwood Common

LAWRENCE HALPRIN COLLECTION, THE ARCHITECTURAL ARCHIVES, UNIVERSITY OF PENNSYLVANIA. TOP: CRIS BENTON. BOTTOM

1953: William Wurster and Halprin collaborate on the Greenwood Common in Berkeley. The 2.5-acre site is divided into 12 private lots with a half-acre open space that has views toward the Golden Gate Bridge.

1953: Halprin is hired to complete a master plan for the University of California, Berkeley, which leads to multiple projects on campus, including Sproul Plaza, the grounds of the Student Union, and a renovation of Greek Theater. Sproul Plaza will play a major role in the free speech movement in 1964. Prior to that time, college students were often unable to advocate for political causes on university property—a rule that is relaxed after a series of demonstrations. The plaza later serves as the site for important protests against the Vietnam War.



Old Orchard Shopping Center

Levitton Shopping Center

1955: Halprin collaborates on plans for the Old Orchard Shopping Center in Skokie, Illinois, which is designed around an open "mall," a form that was popular during the postwar years.

1957: He is invited to participate on a design commission that oversees planning for Seattle's World's Fairground.

Lawrence Halprin office in 1958

JANUARY 1960: The firm is reorganized to create Lawrence Halprin & Associates, which becomes an interdisciplinary group of landscape architects, architects, planners, ecologists, and photographers. As the firm pushes into more urban landscapes, it brings to this work the same interest in designing for people that permeated the California school of garden design.

1960: Halprin plans and designs St. Francis Square with Marquis & Stoller, an affordable housing development with 300 apartments that front on a communal open space. A postoccupancy evaluation by Claire Cooper Marcus later finds the space to be well loved, as it provides lots of places for children to play.

1962: Halprin's plans for Ghirardelli Square boldly repurpose an old factory in San Francisco.

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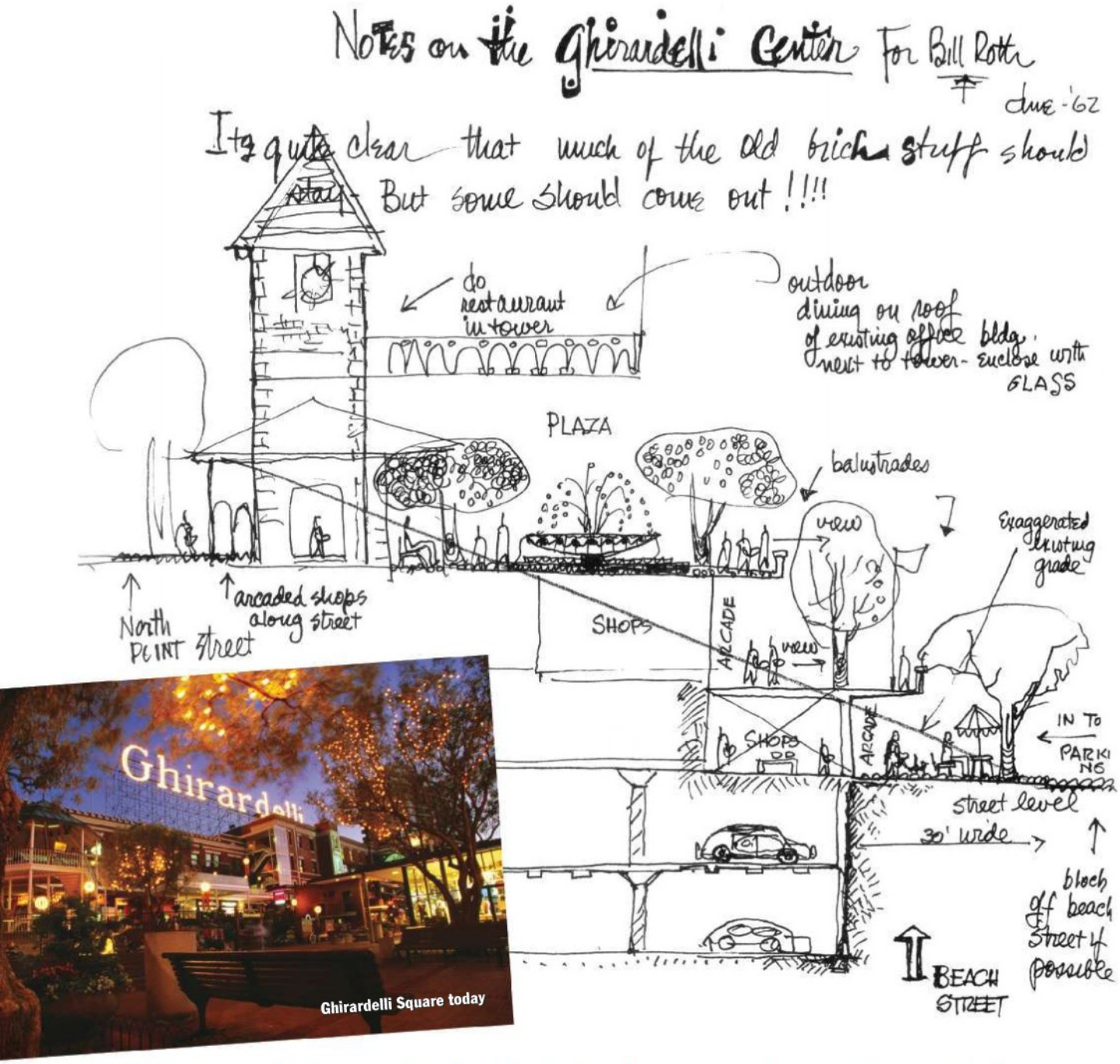

Ghirardelli Square today

"Halprin says his best work is done for daring clients, men who are willing to risk their money on good ideas and have the guts to live the risk through. One of these is William Roth, who bought the old Ghirardelli chocolate factory buildings on San Francisco's waterfront to save them from destruction. An enchanting tangle of box factory, clock tower, manufacturing bays, and storage space, it was not clear the buildings were anything but a monument to 19th century industrial whimsy. With architects Wurster, Bernardi & Emmons, Halprin's firm turned the block into an intriguing and commercially successful array of boutiques and restaurants."

—David Lloyd Jones in "Lawrence Halprin: Eco-Architect," *Horizon*, volume XII, number 3, Summer 1970

LAWRENCE HALPRIN COLLECTION, THE ARCHITECTURAL ARCHIVES, UNIVERSITY OF PENNSYLVANIA, TOP; RICHARD CUMMINS, BOTTOM

Sea Ranch

COURTESY THE CULTURAL LANDSCAPE FOUNDATION, CHARLES BIRNBAUM, FASLA. TOP: LAWRENCE HALPRIN COLLECTION, THE ARCHITECTURAL ARCHIVES, UNIVERSITY OF PENNSYLVANIA. BOTTOM

"As a lover of wilderness, I am convinced that the solution to its preservation on land, on sea, and in the air, is the design and planning of the city.... What I am trying to propose is that we try to separate the true wilderness experience and differentiate it from the need we all have to experience nature and be quiet at times on a woodland trail, or even go fishing.... If our cities were designed carefully to provide the kind of environment which we need, then we could, in our daily rounds, lead creative lives without quite the urgency to relate to the wilderness, except for the very special and unique qualities which only wilderness can bring."

—Halprin in *Tomorrow's Wilderness*, edited by Francois Leydet and published by the Sierra Club, 1963

Sierra watercourse sketch

"In a small country like Israel where every square foot of land is irreplaceable, the land occupied by communities is jealously guarded. Urban sprawl and suburban land wastage cannot be tolerated because land is the most precious of all commodities.... Watching them build, select, plant, set aside parks and wilderness areas, and establish agriculture is a profound and exciting lesson in ecological and landscape value judgments.... It can help us all everywhere in assessing our own wasteful attitudes toward the design and use of land and our lives upon it."

—Halprin in "Israel: New Life in an Old Land," *Landscape Architecture*, April 1962

APRIL 1962: Halprin edits a special issue of *Landscape Architecture* that focuses on Israel's efforts to make the desert bloom and uses Israel to critique American attitudes toward development.

1963: Halprin's first book, *Cities,* is published. That same year, Halprin participates in a Sierra Club conference on preserving the wilderness, laying out a philosophy that can be seen throughout much of his work.

1964: Halprin begins collaborating on Sea Ranch, a vacation community in northern California, where his ideas for "ecological planning" are first implemented. Plans call for clustering housing, working with the existing contours, and preserving open space along the ocean for everyone's enjoyment.

MAY 1965: Halprin is invited to participate in the White House Conference on "Natural Beauty." This conference leads to the National Environmental Policy Act and its requirements for environmental impact assessment.

"[Halprin's] first action after being commissioned by Oceanic Properties Inc....was to sleep on the beach for several nights. In the next two years his firm charted wind force and direction, the qualities of the soil, the topography of the property, and the cycles of plant and animal life on it. They choreographed the developers' behavior with respect to all of these."

—David Lloyd Jones in "Lawrence Halprin: Eco-Architect," *Horizon*, volume XII, number 3, Summer 1970

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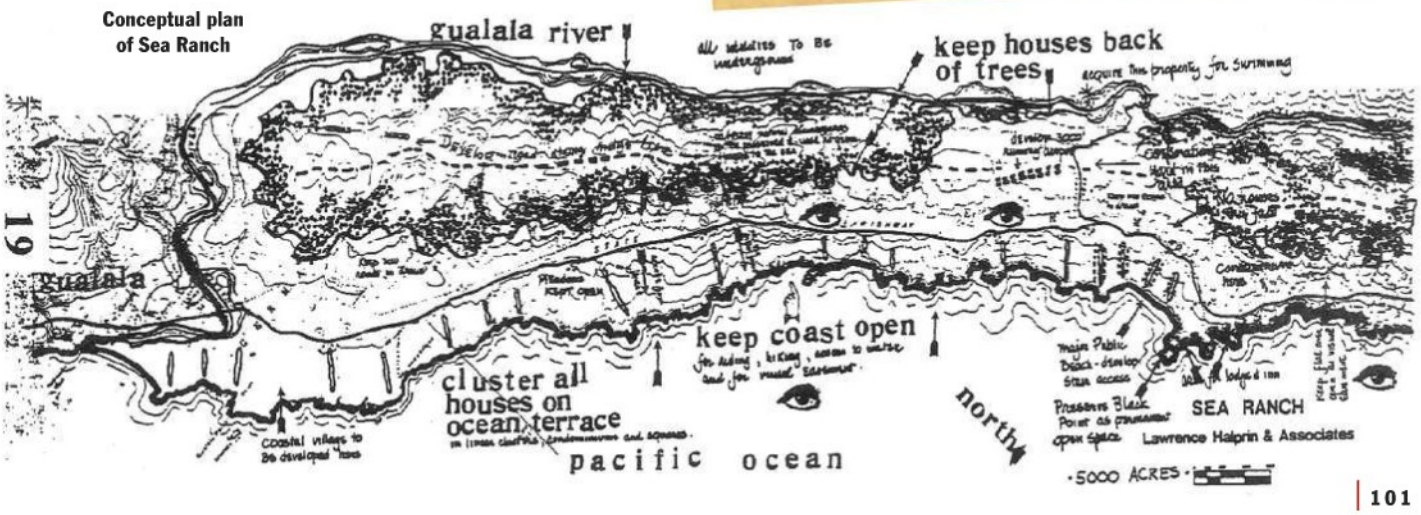
Conceptual plan of Sea Ranch



Lovejoy Plaza

"It has been said that Americans are not a 'plaza people' as are the Italians or French—the implication is that plazas do not fit our lifestyle and therefore we should not build them. This is demonstrably not true.... The problem has arisen only when plazas did not relate to any activity, when they were simply vast or sterile spaces designed only as foregrounds for buildings or with no functional reason for their being.... We do not accumulate any longer vast throngs of people to pray or to hear presidential announcements. The radio and television have taken care of that. What we do need are small-scaled plazas as outdoor living rooms, places to see and be seen.... Our plazas need to be lived in."

—Halprin in *New York New York*, 1968

1966: *Freeways* is published. Following the "Great Highway Revolt" in San Francisco, the California State Division of Highways hires Lawrence Halprin & Associates as a consultant in the early 1960s. Halprin's second book is based on this work.

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Halprin leads workshop

"Larry had the image, inspired by a waterfall he loved in the High Sierra, of water splashing over rocky ledges. This resonated with images I carried of a cascade on slanted ledges just above Fallen Leaf Lake, near Lake Tahoe, California. I take it as a corroboration of the effectiveness of Larry's skills in inviting participation, that to this day when each of us lectures about Lovejoy, he shows his source and I show mine.... I no longer remember who thought up what on Lovejoy Plaza.... I remember going to Larry with my first plan of the water steps; I was very proud of them at the time, but I recall them now as being pathetically drab. Larry was enthusiastic, though, and didn't discourage me a bit when he suggested that I do them over completely, making them far more rich and complex."

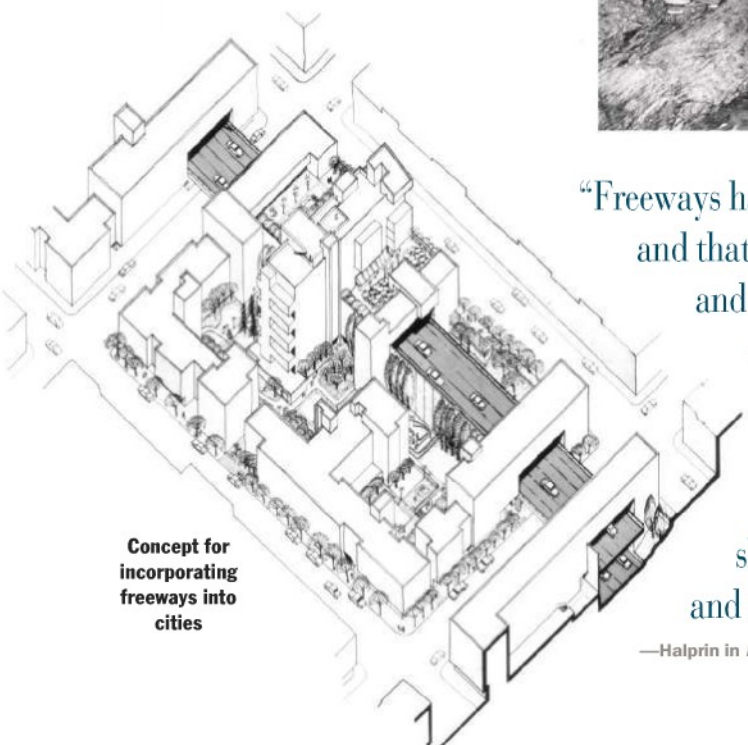
—Charles Moore in "Still Pools and Crashing Waves," an essay in *Lawrence Halprin: Changing Places*, San Francisco Museum of Modern Art, 1986

SUMMER 1966: "Experiences in Environment," the first in a series of summer workshops led by Anna and Lawrence Halprin, brings together approximately 50 young dancers and designers. The workshops are meant to get designers out of the studio and into the world so they can understand how people experience a space.

JULY 1966: Lovejoy Plaza, the first of the interactive fountains that would become a signature of Halprin's office, is completed in Portland, Oregon.

DECEMBER 1966: President Lyndon B. Johnson appoints Halprin to the National Council on the Arts. Halprin also serves on the first Advisory Council on Historic Preservation.

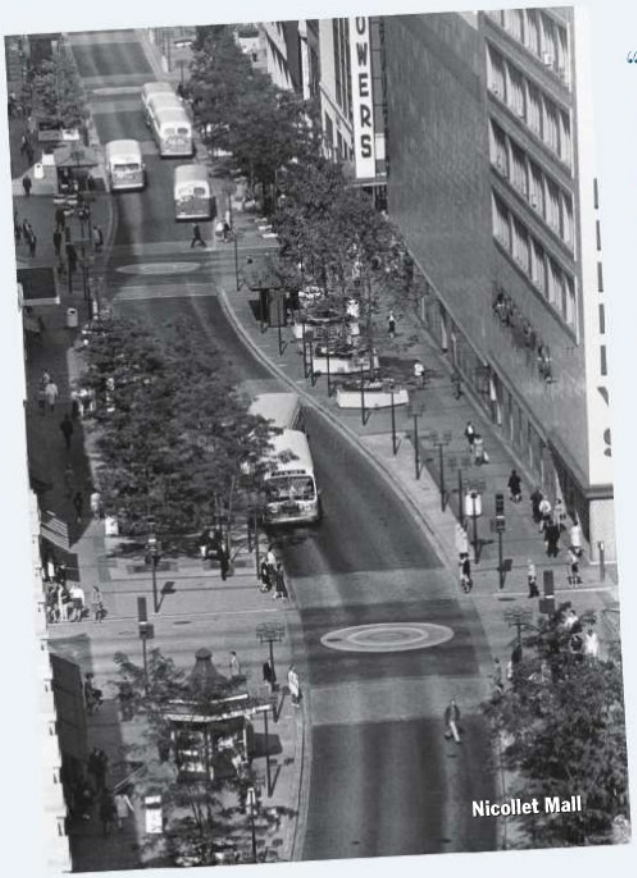
Workshop at Sea Ranch



Concept for incorporating freeways into cities

"Freeways have always been designed for one purpose only and that is to move traffic. We must reorder our thinking and realize that freeways must also be designed to carry their own built-in amenities with them. They should include in their design and construction the inevitable requirements of urban redevelopment—housing, parks, offices, shops. They must in fact become a part of the city and cease being separate from it."

—Halprin in *Freeways*, 1966



Nicollet Mall

"The entire range of street furnishings was especially designed for [Nicollet Mall] to convert it from a 'nondescript experience' to an urbane place to be in."

—Halprin in *Cities: Revised Edition,* The MIT Press: Cambridge, Massachusetts, 1972

Nicollet Mall streetscape

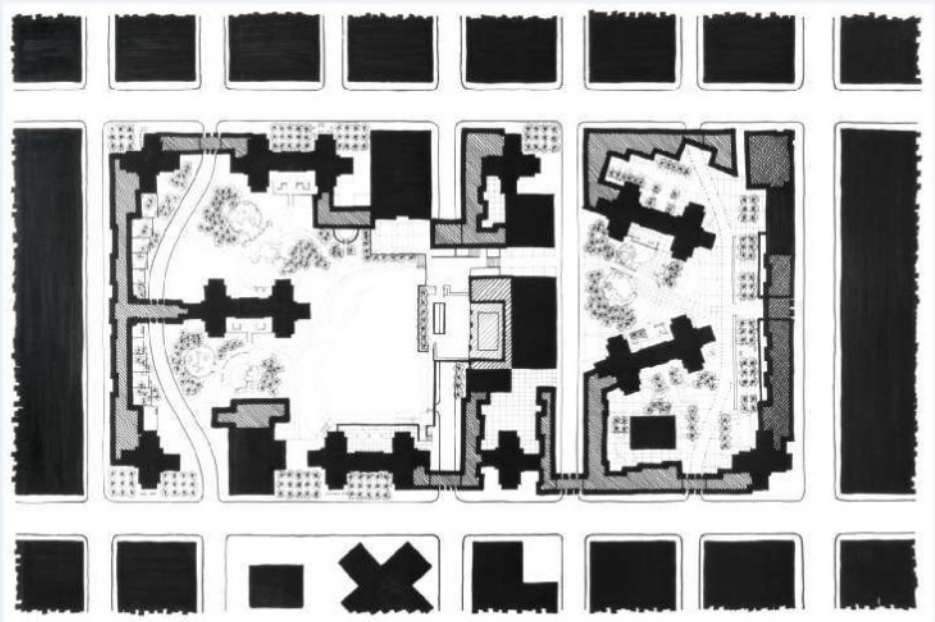
MARCH 1969: A group of 10 to 15 young "rebels" who are disillusioned with their role in the firm and the sorts of projects they are working on come to Halprin and request that he bring in a psychologist to facilitate discussions between the young employees and the more established veterans in the firm. They are also interested in expanding Halprin's workshops within the office itself. The openness that results creates tension within the office and leads to a major reorganization of Lawrence Halprin & Associates. The firm's "experiment" is later chronicled in *Innovation* magazine and *Landscape Architecture* (May 1974).

1967: Nicollet Mall closes off Minneapolis's main street to all but buses, which travel along a serpentine central path, creating the nation's first transit mall.

MARCH 1968: In *New York New York,* a report on improving open spaces created through urban renewal, Lawrence Halprin & Associates pushes for a more humane, people-centered approach to urban redevelopment that uses architecture to create space—drawing on research by Edward T. Hall, Jane Jacobs, and psychologist Paul Baum, who all serve as consultants on the project.

1968: Secretary of the Interior Stewart Udall hires the firm to create an unprecedented ecological plan for the U.S. Virgin Islands—not just their wilderness areas but all current and future development as well. The firm is told to consider everything from industrial production to waste management, zoning, transportation, and even population planning. However, plans are altered after Nixon takes office.

Proposal to integrate public housing into city fabric from *New York New York*



"Le Corbusier's idea that the way to get light and air into a city was to put tall towers in parks was a disaster for this city. It has destroyed the street, isolated the people in towers, and made parts of the city look abandoned. It has destroyed the things people seem to like most about New York." —Halprin in *New York New York,* 1968

"More and more Halprin had come to feel that the office was no longer 'his,' and he had lost the sense that he was part of the process. Then his whole professional dilemma emerged more starkly. He could allow the office to grow larger physically, merely putting his stamp of approval on projects it handled, or he could try to recover a situation where he could express his deep need to be involved personally with each project, perhaps in a small firm with just three or four associates. The latter was what he craved most."

—Nilo Lindgren in "Riding a Revolution," *Landscape Architecture,* July 1974

Lawrence Halprin & Associates in the early 1970s

APRIL 1969: Halprin is arrested protesting a flood control project on Tamalpais Creek in Marin County, California. Despite Halprin's attempts to draw up alternative solutions, the creek is eventually paved over.

JUNE 1969: Halprin is named a fellow of the American Society of Landscape Architects.

OCTOBER 1969: In *The RSVP Cycles: Creative Processes in the Human Environment,* Halprin lays out ideas for creative workshops that are meant to bring together previously divergent groups to define the goals of a design. His plans for these workshops, which are carefully guided, are called scores.

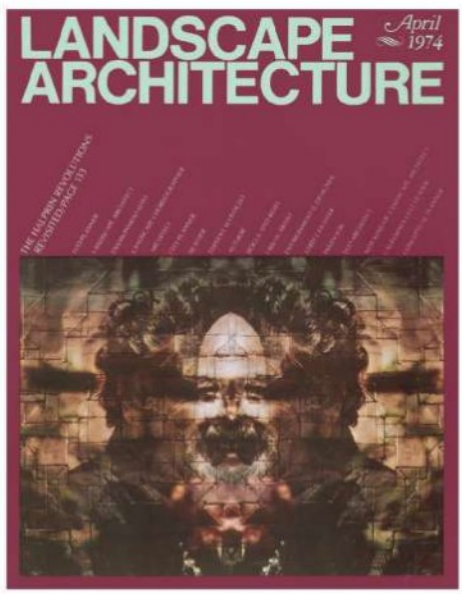
"Scores are not goal-oriented; they are hope-oriented.... In the planning of communities a score visible to all the people allows each one of us to respond, to find our own input, to influence before the performance is fixed, before decisions are made. Scoring makes the process visible."

—Halprin in *The RSVP Cycles: Creative Processes in the Human Environment,* 1969

DECEMBER 1969: During the 1950s and 1960s, Halprin works on a number of projects in Israel. Through this work, he meets Teddy Kollek, the mayor of Jerusalem from 1965 to 1993. In 1969, Kollek appoints Halprin to serve on the Jerusalem Committee, which encourages interfaith dialogue about the important issues facing the city. For nearly two decades, he is an important adviser to the mayor and convinces him to include public involvement in the planning process.

"Though his electric blue smock, beard, and bead necklace give him something of the air of a California cult-leader, he speaks convincingly about 'dynamic conservation.' It is his phrase for complicated sets of actions—scored actions—that make changes in the environment without fundamentally damaging it."

—David Lloyd Jones in "Lawrence Halprin: Eco-Architect," *Horizon,* volume XII, number 3, Summer 1970



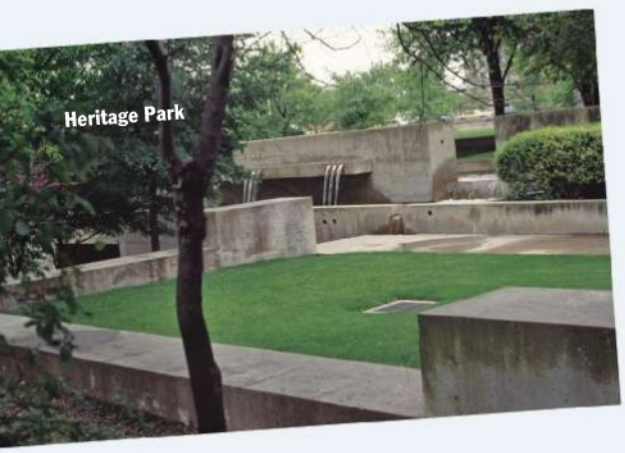
LAWRENCE HALPRIN COLLECTION, THE ARCHITECTURAL ARCHIVES, UNIVERSITY OF PENNSYLVANIA. TOP AND OPPOSITE THREE: COURTESY DEAN ABBOTT, BOTTOM

The Auditorium Forecourt Fountain (Ira Keller Fountain)

1969–1980: The Fort Worth Central Business District Master Plan is the first time Halprin's *RSVP Cycles* and "Take Part" workshops are applied to one of the firm's projects. These sessions eventually lead to the construction of Heritage Park.

JUNE 1970: The Auditorium Forecourt Fountain in Portland, a plaza entirely integrated with a cascading fountain, opens to critical acclaim. A young designer named Angela Danadjieva plays a leading role in the design of this project and at Freeway Park as well.

> "On Tuesday, Portland will start the water flowing in the fountains of what may be one of the most important urban spaces since the Renaissance. The word 'fountains' requires a little clarification. 'Waterfalls' would be a more accurate description."
>
> —Ada Louise Huxtable, "Coast Fountain Melds Art and Environment," *New York Times*, June 21, 1970



Heritage Park

Halprin models FDR Memorial, 1970s

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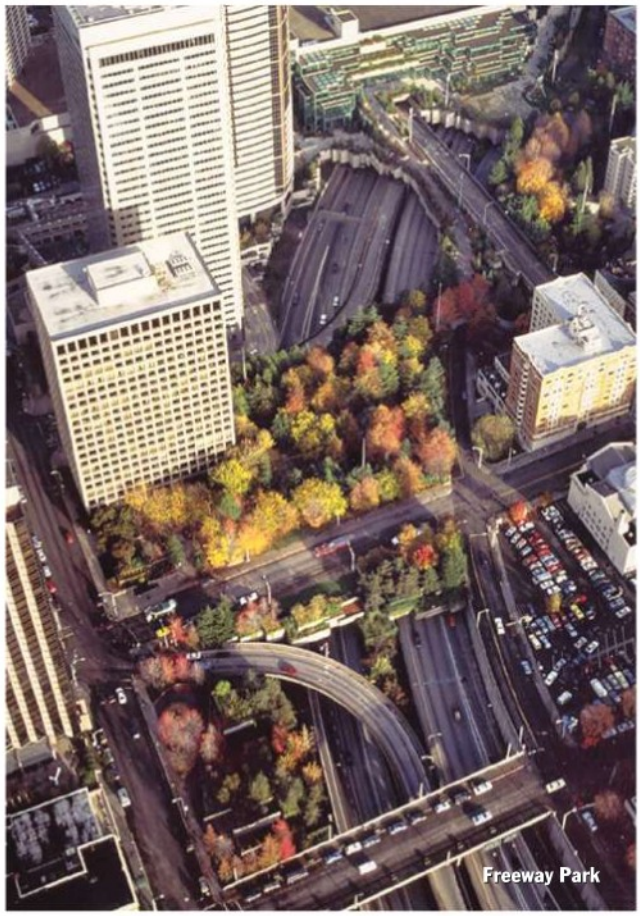
"This project was successfully built because it did not become a casualty of the war between freeway fighters and freeway lovers."

—James Ellis, a lawyer, community leader, and early champion of Freeway Park in "How the Impossible Came to Be," by Margaret Marshall, *Landscape Architecture,* September 1977



Freeway Park

SUMMER 1970: As Halprin dramatically expands the role of the landscape architect, no one in the media knows what to call him. A major profile of Halprin appears in *Horizon* magazine, labeling Halprin an "eco-architect."

1972: Halprin publishes selections from his sketchbooks, chosen by Jim Burns, a former editor of *Progressive Architecture,* who joins Lawrence Halprin & Associates after covering one of Halprin's workshops and plays an important role in expanding those workshops within the firm.

AUGUST 1973: Halprin & Associates opens a New York office, led by Jim Coleman.

1975: Partnering with Sue Yong Li Ikeda, a longtime employee of Lawrence Halprin & Associates, Halprin forms RoundHouse, a studio/think tank that attempts to bring people from different fields together to collaborate. During its four-year run, the company's biggest accomplishment is a documentary about Salvador Dali titled *Le Pink Grapefruit.*

JULY 4, 1976: Freeway Park opens in Seattle.

1976: The Main Street Mall, which will go on to become one of the nation's more successful pedestrian malls, opens in Charlottesville, Virginia.

1976: Halprin dissolves Lawrence Halprin & Associates.

JUNE 1978: Halprin goes back into business with the Office of Lawrence Halprin.

1978: ASLA awards Halprin its gold medal.

"From that point on he kept his in-house staff at under 10 people. Everyone in the office became familiar with Larry's design process, and the studio was quite open and collaborative."

—Dee Mullen, who worked closely with Halprin in his later years

"Halprin led 'scored walks' through town, which helped people understand the space. Then they got in a room together—all the vested interests in the city—and actually did design work on big scrolls of paper. It gave us an idea what was in the client's head."

—Dean Abbott, a project designer at Lawrence Halprin & Associates, describing the Take Part process as applied to his work on the Main Street Mall in Charlottesville, Virginia, in "Mall Brawl," by Daniel Jost, ASLA, *Landscape Architecture,* October 2008

Main Street Mall, 2008

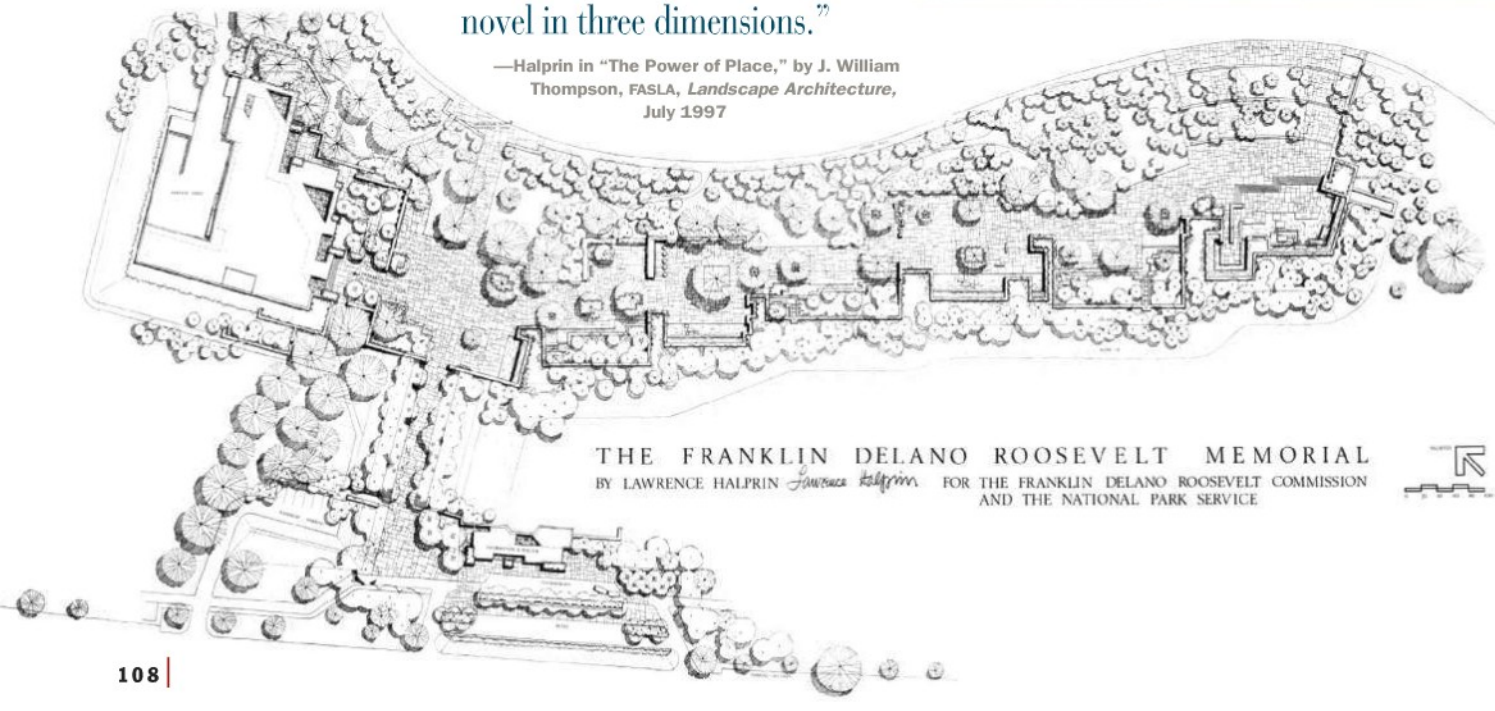
COURTESY THE CULTURAL LANDSCAPE FOUNDATION/THE OFFICE OF LAWRENCE HALPRIN. TOP: LAUREN NOE. BOTTOM

FDR Memorial, *here*, and the staff who worked on it on opening day, *below*

RON BLUNT, TOP; COURTESY DEE MULLEN, CENTER; LAWRENCE HALPRIN COLLECTION, THE ARCHITECTURAL ARCHIVES, UNIVERSITY OF PENNSYLVANIA, BOTTOM

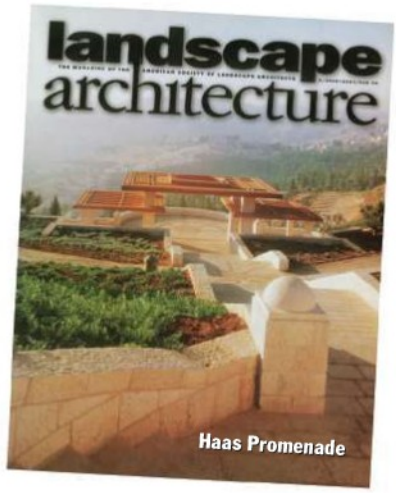
"The basic idea of the FDR Memorial is people moving through a series of sculptural spaces. It's a narrative—like reading a novel in three dimensions."

—Halprin in "The Power of Place," by J. William Thompson, FASLA, *Landscape Architecture*, July 1997



THE FRANKLIN DELANO ROOSEVELT MEMORIAL
BY LAWRENCE HALPRIN *Lawrence Halprin* FOR THE FRANKLIN DELANO ROOSEVELT COMMISSION AND THE NATIONAL PARK SERVICE

Levi's Plaza



"A parallel between Olmsted and Halprin, pointed out by the late historian Albert Fein, is that both wrote books; in fact, one of the reasons Halprin's work is important, according to Fein, is that he wrote about it."

—J. William Thompson, FASLA, in "Master of Collaboration," *Landscape Architecture,* July 1992

1982: Levi's Plaza is completed in San Francisco—part of a new, more intimate urban campus for Levi-Strauss Inc. In a more literal reference to the High Sierras than his previous fountain work, a large hunk of granite shipped down from the mountains is used for the main waterfall rather than concrete.

1986: A retrospective of Halprin's work is exhibited at the San Francisco Museum of Modern Art. The exhibit is designed by architect Frank O. Gehry, with whom Halprin collaborated on an art park that was never implemented.

1987: The Walter and Elise Haas Promenade, a collaboration between Halprin and Shlomo Aronson, International ASLA, is completed in Jerusalem. It sits on the site of a former "no-man's-land" that divided Jordan and Israel between 1947 and 1968, providing a place where Arabs and Israelis can recreate together.

1996: Following master plans by Halprin's firm, a section of Chicago's Lake Shore Drive is relocated.

MAY 2, 1997: Twenty-three years after it was first designed, the FDR Memorial is dedicated in Washington, D.C. A collaboration between Halprin; sculptors Leonard Baskin, Neil Estern, Robert Graham, Tom Hardy, and George Segal; landscape architect Dean Abbott; and others, it is the first memorial to an American president that is a landscape rather than a structure. It leads to a revolution in memorial design.

JIM BENSMAN

Books Authored or Coauthored by Lawrence Halprin

1963: *Cities,* New York: Reinhold.
1966: *Freeways,* New York: Reinhold.
1968: *The Freeway in the City,* coauthor of report completed for the Federal Highway Administration by an eight-person multidisciplinary committee; Washington, D.C.: U.S. Government Printing Office.
1968: *New York New York,* for the Housing and Development Administration; New York: City of New York.
1969: *The RSVP Cycles: Creative Processes in the Human Environment,* New York: George Braziller Inc.
1972: *Lawrence Halprin Notebooks 1959–1971,* Cambridge, Massachusetts: MIT Press.
1972: *Cities: Revised Edition,* Cambridge, Massachusetts: MIT Press.
1974: *Taking Part: A Workshop Approach to Creativity,* coauthor with Jim Burns; Cambridge, Massachusetts: MIT Press.
1978: *Process Architecture No. 4: Lawrence Halprin,* coauthor; edited by Ching-Yu Chang; Tokyo: Process Architecture Publishing.
1981: *Sketchbooks of Lawrence Halprin,* Tokyo: Process Architecture Publishing.
1997: *The Franklin Delano Roosevelt Memorial,* San Francisco: Chronicle Books.
2002: *The Sea Ranch…Diary of an Idea,* Berkeley, California: Spacemaker Press.
[FORTHCOMING]: *Still Changing Places: An Autobiography,* Philadelphia: University of Pennsylvania Press.

Exhibitions and Interviews:

- *Lawrence Halprin: Changing Places,* San Francisco: San Francisco Museum of Modern Art, 1986.
- A series of interviews Charles Birnbaum, FASLA, conducted with Halprin is posted on the Cultural Landscape Foundation web site: *http://tclf.org/content/lawrence-halprin.*
- A 2007 interview with Birnbaum at the ASLA Annual Meeting in San Francisco is available on podcast: *http://dirt.asla.org/2009/10/27/lawrence-halprin-fasla-dies-at-93.*

LATE 1990s/2000s: A number of Halprin landscapes are threatened, including Freeway Park and Heritage Park. Halprin argues that his work is art and that local governments should consult with him before making any alterations. After much debate, the fountain at the UN Plaza in San Francisco is restored. However, Skyline Park is drastically redesigned.

2002: President George W. Bush awards Halprin the National Medal of Arts.

2003: Halprin is the first recipient of the ASLA Design Medal.

"Great examples of environmental design are built for all of us to enjoy and participate in—they are not there to solve problems of a small minority or as a panacea for social and psychological problems. Desecrating the bridge is an affront to the millions throughout the world who are enriched by it."

—Halprin argues against installing a suicide barrier in "Don't destroy shape and harmony of the Golden Gate Bridge," *San Francisco Chronicle*, August 12, 2005

Halprin in Landscape Architecture

A RECENT SCAN of the *Landscape Architecture* archives turned up 41 articles on Halprin's work. Here are a few of the highlights.

APRIL 1962: "Israel: New Life in an Old Land," by Lawrence Halprin. Halprin acted as a special editor for this issue, which focused on Israel and the effort to make the desert bloom.

JULY 1974: "Riding a Revolution," by Nilo Lindgren. A two-part article looks at the dramatic reorganization of Lawrence Halprin & Associates, one year and then three years after a psychologist is brought in to improve relations among staff.

SEPTEMBER 1977: "Seattle's Freeway Park I: How the Impossible Came to Be," by Margaret Marshall, and "Seattle's Freeway Park II: Danadjieva on the Creative Process," by Angela Danadjieva. Marshall addresses some of the politics that led to the creation of Freeway Park, and Danadjieva, who helped define the office's style, writes about the process for designing the fountains.

JANUARY 1979: "The FDR Memorial: Halprin redefines the monumental landscape," by Thomas Aidala with an introduction by Grady Clay, Honorary ASLA. The design for the FDR Memorial is unveiled.

NOVEMBER/DECEMBER 1986: "Point of View," by Lawrence Halprin. Halprin looks back on his career.

JULY 1992: "Master of Collaboration," by J. William Thompson, FASLA. An excellent profile of Halprin and his early embrace of the public process.

FEBRUARY 1993: "Freeway Park: Still an icon but a few glitches at 25," by Paul Roberts.

JULY 1997: "The Power of Place," by J. William Thompson, FASLA, on the recently completed FDR Memorial. This is the second time the FDR Memorial appears on the cover of *Landscape Architecture.* The first time was January 1979.

DECEMBER 1999: "To Repair or Replace," by Michael Leccese. Controversy ensues over changes to the Lawrence Halprin & Associates design for Skyline Park in Denver.

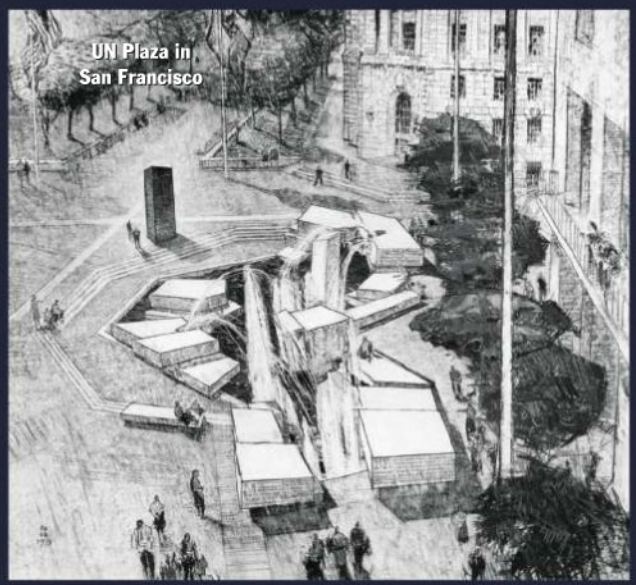
MAY 2000: "Habitable Image: A network of promenades defines a country's past, points toward its future," by Paul Bennett. Learn about Halprin's work on the Haas Promenade in Jerusalem, which provides amazing views of the ancient city and links Israeli and Palestinian neighborhoods.

MAY 2005: "Contested Terrain: This month's LA Forum visits two ailing Seattle parks to ponder this question: To what extent should these icons be preserved?" by Susan Hines. Fred Kent, Charles Birnbaum, FASLA, Richard Haag, FASLA, Mark Hinshaw, Ken Bounds, and Linda Jewell, FASLA, discuss what if anything should be done to reactivate Seattle's Freeway Park after the Project for Public Spaces proposes major changes to the space.

FEBRUARY 2006: "The Spirit of Stone: At San Francisco's Stern Grove, Lawrence Halprin revives a magical outdoor theater," by Linda Jewell, FASLA. A well-written article about one of Halprin's final projects.

OCTOBER 2008: "Mall Brawl: A controversial project in Charlottesville, Virginia, aims to revitalize Halprin's Main Street Mall, one of the few successful pedestrian malls, which is beginning to crumble due to lack of maintenance," by Daniel Jost, ASLA. How Charlottesville's pedestrian mall became a success story over time and the controversy over how much of its original detailing should be preserved.

JANUARY 2009: "Dancing Through Halprin's Portland: Almost 40 years after it was built, Portland, Oregon's Open Space Sequence hosts a dance event that honors Lawrence and Anna Halprin," by Judith R. Wasserman. Beautiful photographs show off Lovejoy Plaza and the Auditorium Forecourt Fountain (now the Ira Keller Fountain).



UN Plaza in San Francisco

"My immediate reaction is anger. Then it's 'gee whiz.' We were like scouts in war, working on point to induce people to move back to the city."

—Halprin on plans to redesign UN Plaza in "For a Shaper of Landscapes, a Cliffhanger," by Patricia Leigh Brown, *New York Times*, July 10, 2003

LAWRENCE HALPRIN COLLECTION, THE ARCHITECTURAL ARCHIVES, UNIVERSITY OF PENNSYLVANIA. TOP: COURTESY OFFICE OF LAWRENCE HALPRIN. BOTTOM LEFT: PEG SKORPINSKI. BOTTOM RIGHT

"The Bay Area has maintained its sense of regional integrity, partly because it hasn't destroyed its natural environment.... The people who have achieved this, even if they're landscape architects, have achieved it not so much as designers but as people in their public ways. And that means taking a visible position.... I suppose I feel like I've had some influence that way. If so, that's what I'd be more proud of than any specific designs, although I've tried to marry the two."

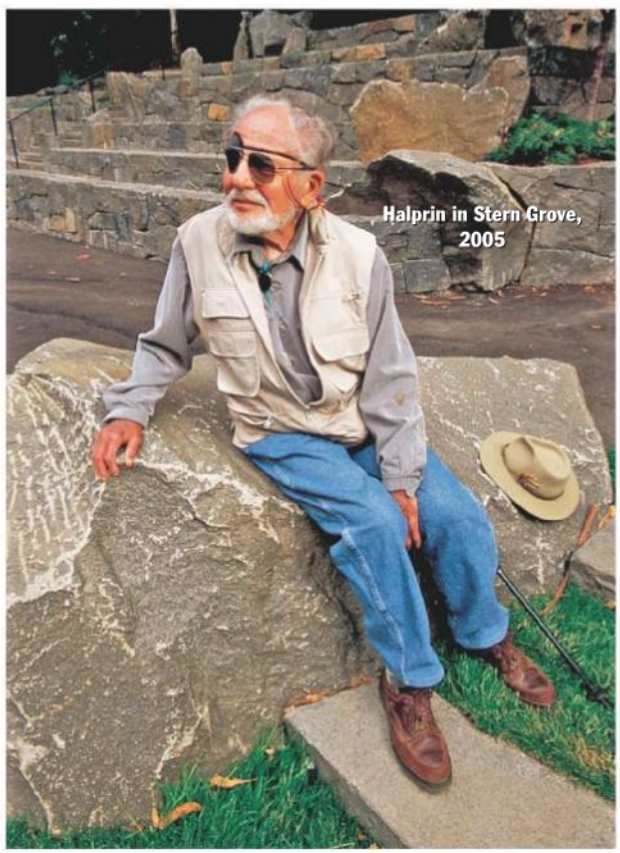
—Halprin in "Point of View," *Landscape Architecture*, November/December 1986

Approach to Yosemite Falls

JUNE 2005: Stern Grove Rhoda Goldman Concert Meadow opens in San Francisco, one of three major projects completed by the firm that year—two of which appear on the cover of *Landscape Architecture* (in January and February 2006). The other projects are George Lucas's Letterman Digital Arts Center and the approach to Yosemite Falls, a fitting finale for a man whose work was inspired by hiking and sketching in the Sierras.

AUGUST 2005: Even as he approaches his 90th birthday, Halprin remains a vocal advocate for thoughtful urban design, particularly in San Francisco. In one letter, he rails against proposals for a suicide barrier that would destroy the experience of the Golden Gate Bridge.

SUMMER 2009: Halprin completes his autobiography, which is scheduled to be published by the University of Pennsylvania Press.



Halprin in Stern Grove, 2005

OCTOBER 25, 2009: Halprin passes away at the age of 93.

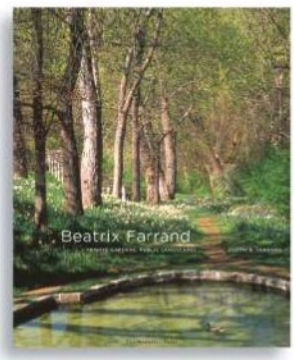
NOVEMBER 2009: Following Halprin's wishes, what remains of his office is closed following his death. Halprin's remaining papers are sent to the University of Pennsylvania's architectural archives where they can be preserved for posterity. LAM

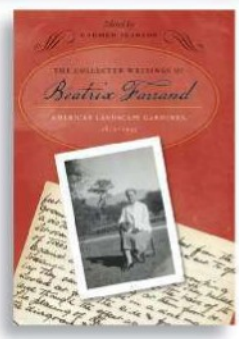
BOOKS

Beatrix Farrand: Private Gardens, Public Landscapes, *by Judith B. Tankard;* New York: Monacelli Press, 2009; 240 pages, $60.
The Collected Writings of Beatrix Farrand: American Landscape Gardener, 1872–1959, *edited by Carmen Pearson;* Hanover, New Hampshire: University Press of New England, 2009; 226 pages, $55.

Reviewed by Lake Douglas, ASLA

BEATRIX JONES FARRAND (1872–1959) was a pioneer "landscape gardener" who had largely faded into professional obscurity until the 1980s, when the spotlight expanded from Frederick Law Olmsted to illuminate those who followed him. Inspired somewhat by feminist perspectives, early Farrand scholarship drew attention to her long and remarkable career (1890s–1950s) of residential and campus projects and their masterful designs, planting schemes, and maintenance plans.





Judith Tankard's authoritative biography and Carmen Pearson's *Collected Writings* allow a reexamination of Farrand's life and career.

Growing up in a family of wealth and privilege, Beatrix Jones was exposed to ideas, European travel, and culture. She studied in the 1890s at Harvard's Arnold Arboretum with Charles Sargent, one of the country's most influential horticulturists, and under his influence she traveled and developed a lifelong interest in plants and planting design that led her to meet England's William Robinson and Gertrude Jeckyll and explore their works firsthand (Farrand later acquired Jeckyll's archive). Plant knowledge and planting design became cornerstones of her reputation.

Early projects were estate gardens—inspired by European precedents—for wealthy family friends of her social set who had large estates in exurban areas of the East Coast. With her natural affinity for plants, Jones was well suited for such work. Her practice for prestigious clients grew, and in 1913 she married Yale historian Max Farrand and settled in New Haven, Connecticut. Notable projects included a garden at the Wilson White House (1913) and large estate gardens such as Dumbarton Oaks (1921) in Washington, D.C., and the Eyrie (1926) in Maine. She also advanced from advising small private schools in the late 1890s to designing for Princeton (1912), Yale (1922), and the University of Chicago (1929), among others.

Tankard's writing is well researched but refreshingly spare, and she efficiently describes Farrand's life and career with insight and without sentimentality. While chapters are not strictly chronological, they flow logically and effectively, creating a descriptive trajectory of Farrand's lengthy and substantial career. Few of Farrand's gardens remain intact; notable are Dumbarton Oaks and the Eyrie, and each gets a chapter. Nevertheless, there are contemporary triumphs to celebrate: Several gardens discussed here have recently been renovated, and there is ongoing interest in rejuvenating others. More than 200 current and archival plans and images illustrate this work. They are well chosen and informative, though I wished for more full-page archival images. Sometimes archival images are effectively paired with current images, but missing are present-day plans (the Dumbarton Oaks plan, for instance, is from 1935). Showing both *then* and *now* demonstrates changes over time, underscoring what Farrand knew: Gardens evolve and designers must factor that inevitability into their designs. Overall, text and images combine for a beautiful presentation.

Tankard's work certainly stands on its own; having Farrand's words in *Collected Writings* and *Unbounded Practice* by Thaisa Way, ASLA, nearby, however, gives a deeper understanding of Farrand and the professional challenges of her times.

Collected Writings contains four sections that roughly correspond to Farrand's career: the young professional, the professional landscape gardener, the campus landscape consultant, and the Maine gardener. Noteworthy is her early journal on plants and European travel (1893–1895), and the short essays given are as engaging today as they must have been when they first appeared. Particularly poignant are Farrand's Reef Point "reports" (1946–1954). Writing in the third person, she describes the vision for the facility, and then, in her final installment, the decision to dismantle it. To the end, Farrand was straightforward, pragmatic, and unsentimental, qualities that come through in both her writing and in Tankard's biography.

These books will appeal to garden historians, academics, garden designers, and amateur gardeners. Together, they add to our understanding of the beginning of landscape architecture in America and reveal what the profession might lose if we forget our heritage of planting design, attention to detail, and historical reference.

Lake Douglas, ASLA, is associate professor at Louisiana State University's Robert Reich School of Landscape Architecture.

21st Century Land Development Code, *by Robert H. Freilich and S. Mark White with Kate F. Murray;* Chicago: APA Planners Press, 2008; 456 pages, $139.95.

Reviewed by Kim Sorvig

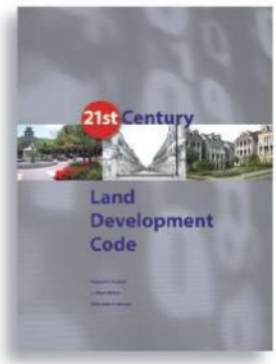
LANDSCAPE ARCHITECTS HAVE a love–hate relationship with building codes. Out of necessity, we become experts on locally applicable regulations; we occasionally have a hand in writing them. Codes are supposed to create good places and prevent rogue developments and substandard construction.

We may find ourselves fighting the code when it rubber-stamps thoughtless design and obstructs sustainable, thought-provoking, or aesthetic innovation. Codes change more slowly than practice. The code serves as an anchor against rushing into a faddish future but can also drag practice back into its past.

For all these contradictory reasons, R. Freilich and M. White's *21st Century Land Development Code* is worth investigating. It offers an expanded view of how land use regulation ought to work, how it actually works, and how it fails. It is understandable by nonspecialists but detailed enough to be valuable to zoning professionals. It will provoke debate—a healthy result—and its best segments might inspire new approaches to local projects.

Both authors are land-use lawyers, widely published on the use of law to support sustainability, growth management, and environmental protection. Together and separately, they have helped hundreds of U.S. cities develop better codes.

The book is woven of four threads. The first is a 10-chapter model code, in legal language, that could literally be adopted as a local ordinance. The second thread is advice on how to write or modify a code. Thread three is a commentary section in each chapter on the practical and political processes, pitfalls, and ironies involved in making such rules work for the common good. Finally, there are extensive citations of legal precedents and books for further reference.



Other books cover each of these aspects of zoning. This book's unique value is in presenting all four threads together, side by side in one volume. Here one can compare what a model code says with how it is crafted (and why)—an excellent crash course in a subject that affects every landscape architect's work but is seldom among our studies.

The first commentary discusses technical writing, listing publications for further help with this essential skill. Specific examples of language that is legally defensible versus what is too vague to stand up in court are included. The authors encourage and show the use of graphics in land-use codes.

A commentary on use patterns reflects and explains New Urbanist and "form-based" zoning. A procedures section uses flowcharts to clarify the often murky process of submissions, hearings, rulings, and appeals; charts and checklists condense complex information.

No book this complex is without flaws and curious omissions. Traffic calming is detailed, but not the larger trend of context-sensitive highway design. Lighting and irrigation requirements are outdated. LEED as law figures a little too prominently for comfort. The definitions section, critical to enforceability, has some bloopers. A basic assumption—that growth is inevitable and thus must be managed—isn't welcome in all quarters and may actually prove unrealistic in the era of peak oil. Nonetheless, managed growth is better than the chaos and destructiveness of profit-driven development.

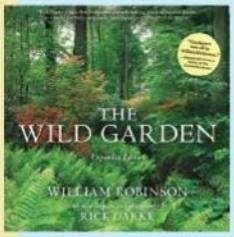
This volume offers a wealth of ways to use local government to improve our built environments. An example: Far too many existing ordinances only set a minimum number of parking spaces per building, but *21st Century Land Development Code* sets both a minimum and a maximum, calling excess parking "a fertility drug for cars."

As a framework for debate, an education in planning, and a reference for crafting better codes, this ambitious book deserves a place alongside Wiley's *Graphic Standards* series and other classic references that underpin design. LAM

Kim Sorvig is a landscape architect, design critic, and environmental author who resides in Santa Fe, New Mexico.

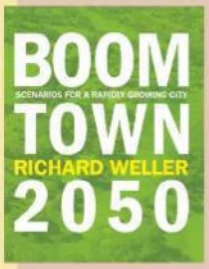
NOTEWORTHY

THE WILD GARDEN, *by William Robinson and edited by Rick Darke;* Portland, Oregon: Timber Press, 2009; 355 pages, $29.95.



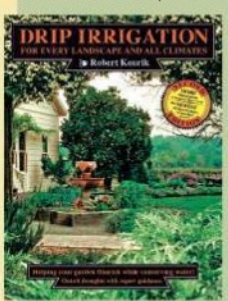
THIS NEW, EXPANDED edition of William Robinson's classic 1870 book advocating an authentically naturalistic approach to gardening is essential reading for today's ecologically minded gardeners. Rick Darke provides several new chapters and 125 color photographs showing how Robinson's concepts are applicable to American gardens from prairies and meadows to coastal and urban settings. The book includes plant lists and suggestions for specific plantings.

BOOM TOWN 2050: SCENARIOS FOR A RAPIDLY GROWING CITY, *by Richard Weller;* Crawley, Western Australia: UWA Publishing, 2009; 453 pages, $99.95.



AUTHOR RICHARD WELLER, a landscape architecture professor at the University of Western Australia, takes a look at the challenges facing the city of Perth, Australia, which is expected to add three million people to its population by 2050. The author calls for discussion and planning to accommodate this population boom while avoiding taking sides in the sprawl vs. anti-sprawl debate, presenting five "horizontal" development scenarios and five "vertical" development scenarios.

DRIP IRRIGATION FOR EVERY LANDSCAPE AND ALL CLIMATES, *by Robert Kourik;* White River Junction, Vermont: Metamorphic Press, 2009; 183 pages, $24.95.



THIS REVISED SECOND edition of the original 1992 manual expands on its core of basic information on the whys and wherefores of drip irrigation with information on newer controllers, timers, and other gadgets; more black-and-white illustrations; and a section on useful web sites to explore.

PRODUCT PROFILES

Cavawood bollards bring the warmth of wood to landscape designs.

This month features sustainable furnishings and site amenities.

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Cavawood also makes wood light poles. For more information, visit *www.cavawood.com.*

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For more information, visit *www.greenscreen.com.*

Greenscreen's column trellis units at California State University at Sonoma add greenery to the student housing complex.

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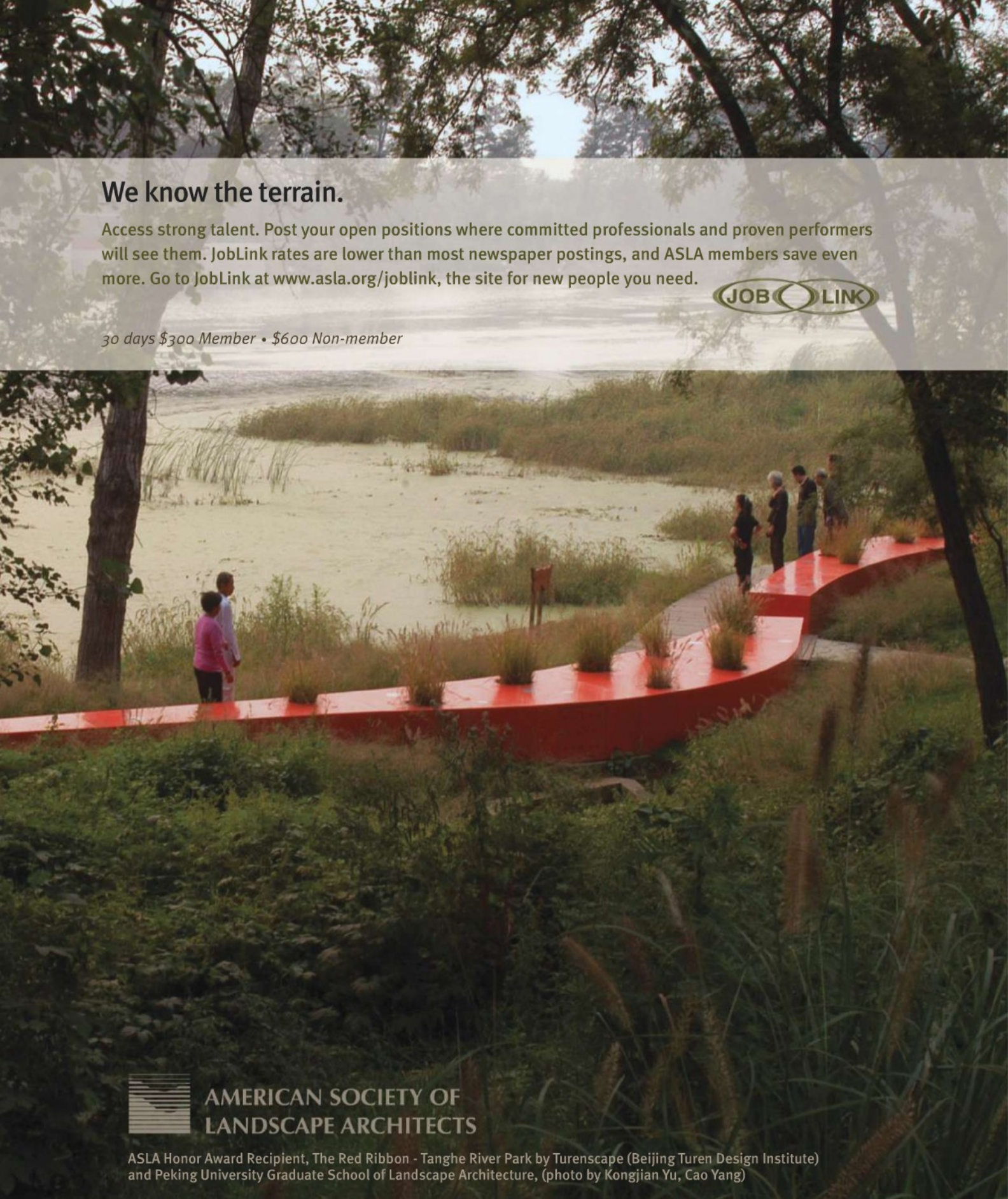
The Metro40 collection is manufactured of recycled aluminum and steel and finished using environmentally friendly techniques. Wood options include Forest Stewardship Council-certified wood. For more information visit *www.landscapeforms.com.*

The Metro40 Rest is a bench that combines metal and wood in a simple, clean design suited to streetscapes and urban transit.

COURTESY CAVAWOOD. TOP LEFT: © GREENSCREEN. TOP RIGHT: COURTESY LANDSCAPE FORMS. BOTTOM



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ASLA Honor Award Recipient, The Red Ribbon - Tanghe River Park by Turenscape (Beijing Turen Design Institute) and Peking University Graduate School of Landscape Architecture, (photo by Kongjian Yu, Cao Yang)

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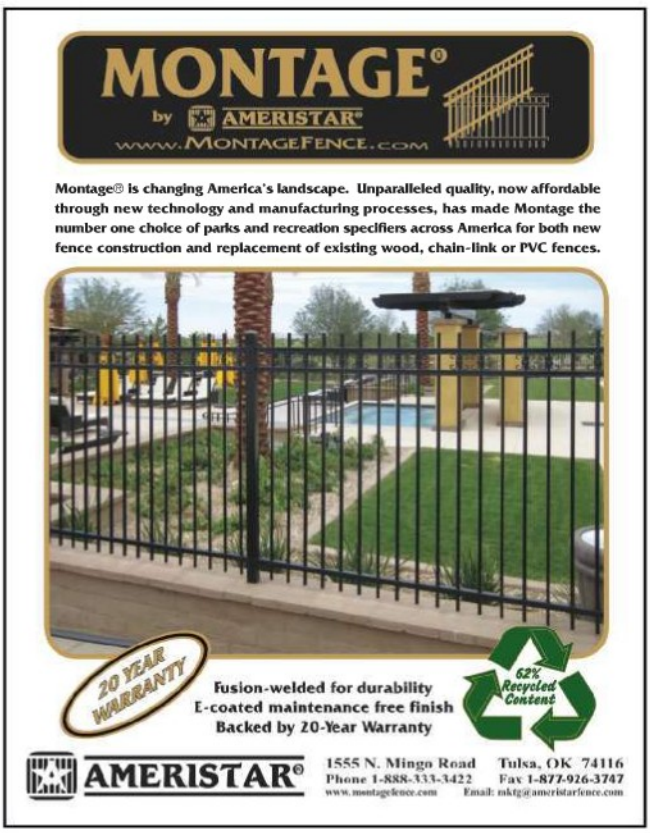

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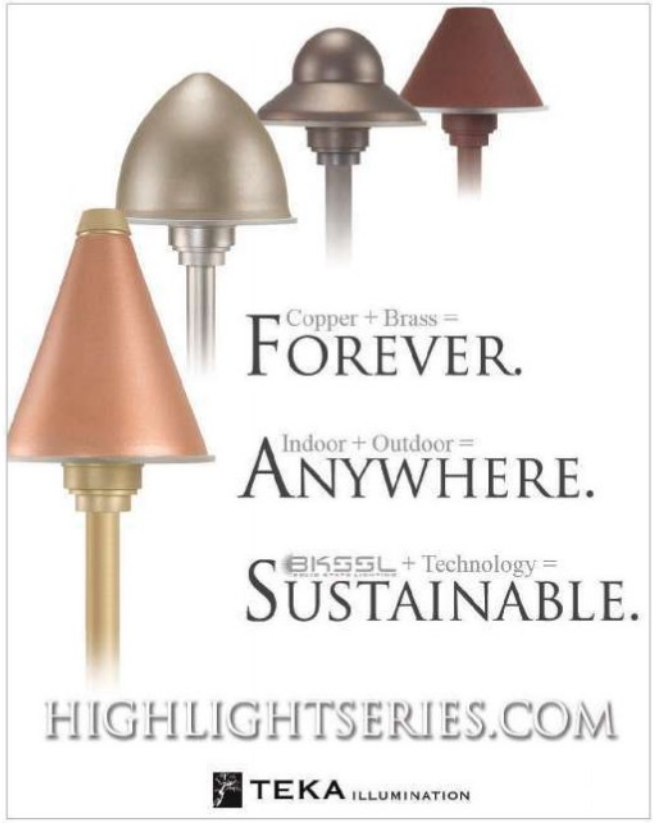

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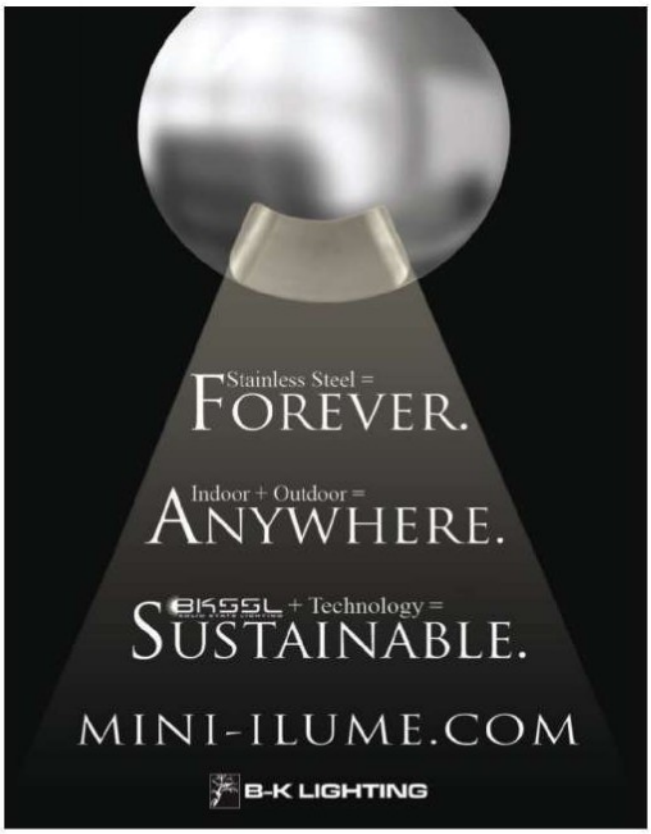

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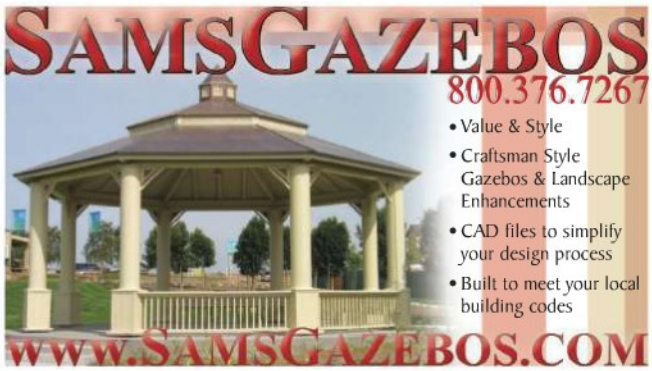

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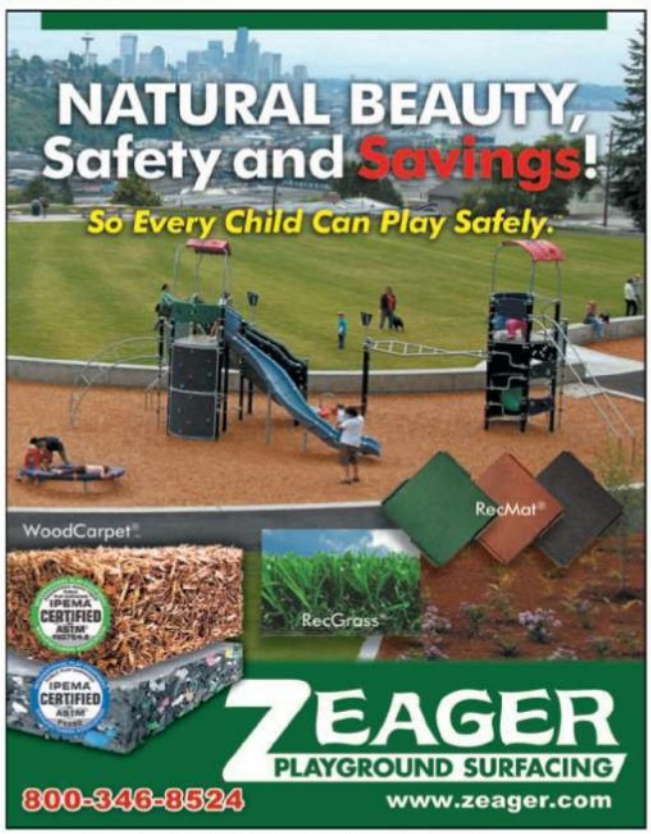

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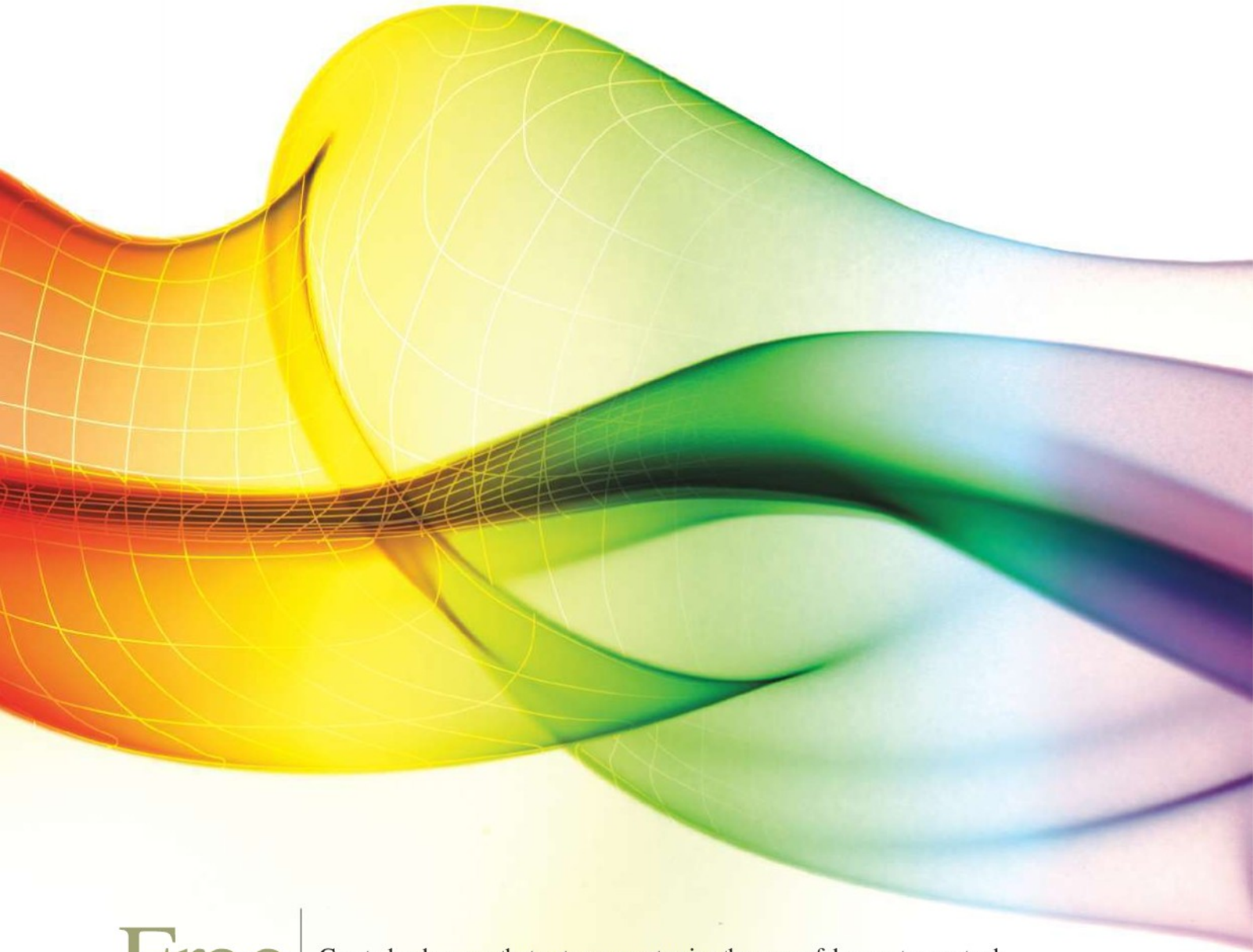

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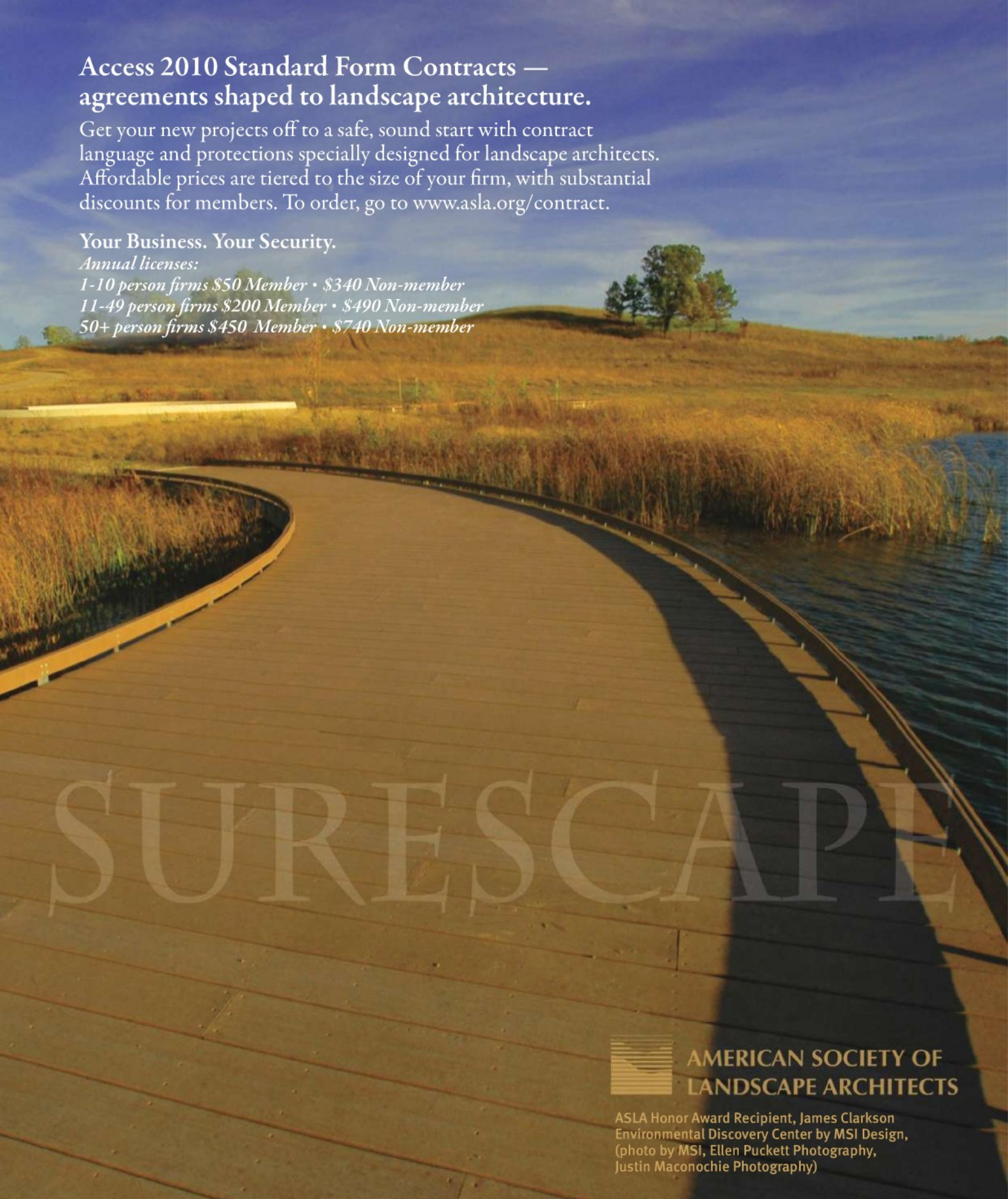
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ASLA Honor Award Recipient, James Clarkson Environmental Discovery Center by MSI Design, (photo by MSI, Ellen Puckett Photography, Justin Maconochie Photography)

(Continued from Page 132) areas in particular are conspicuous in their lack of shade. This is distressing because while adults may be aware that they need to sometimes escape the harmful rays of the sun, children, occupied by their play, may not be. Ironically, although the children's facilities provide little shade, they are one of the most-used portions of the park. Upon talking to a representative at Hargreaves, we learned that one of the driving ideas of the park's design was to maintain open views of the water through the park. This appears to have been accomplished, but seemingly at the expense of heftier trees that could have provided needed shade.

In addition to sacrificing user comfort for the sake of the park's image, in significant portions of the park, programming seems to have received little attention. One of the design elements that we immediately were taken by was the incorporation of the sculptural beach dunes leading from the beach into the park interior. We soon began to feel that the dune areas, which cover a large portion of the eastern end of the park, were a great idea that fell short. Most of the existing dunes along the shore of Miami Beach are protected with rope fences and retaining walls that bar anyone from crossing them. Expanding the dune area into the park could have been an opportunity for much greater interaction between people and the dune landscape, but they were developed in a way that is not conducive to any kind of activity or interaction. A couple of paths cross the dunes, and a few benches (without shade, of course) don't face anywhere interesting. In all our visits to the park, we have yet to see anyone using the path through the dune area, let alone stopping there.

The playground, *above*, offers little protection to children from the harsh Miami sun. The park's stainless steel light towers face a constant battle with corrosion, *below*, caused by the ocean's salty air.

Along with the design flaws regarding usability, the park has some rules that are a bit different than most of the parks in Miami Beach—rules that seem to be in place to maintain an "image" that might be sullied by the presence of certain activities and users. Organized sporting activities are forbidden. The enforcement of this rule is aided in design by the division of previously existing lawn areas into smaller areas that won't easily accommodate such activities. Barbecuing, a favorite tradition of park goers in Miami, is banned. Fishing is banned.

That the park is designed in a way that seems to discourage use was rather surprising until we read the *Basis of Design* report developed for the park by Hargreaves. This document listed cruise ship passengers as the number one users of the park (comprising 76 percent). These are passengers who pass by the park on their ship in the Government Cut but may not actually spend time there. The image the park presents to passing cruise ships is an important consideration, but are these floating sightseers really the park's largest user group?

The design also seems to have ignored the maintenance that will be required to maintain its "image." One of the more interesting design elements of the park is its shoreline stainless steel light towers. These towers are a great addition, but the materials are corroding from the ocean's salty air. These lights were already beginning to show rust in some spots a few months after the park opened to the public. Upon investigation, we learned from a city official that the towers will require a thorough cleaning every three to six months—at a cost of more than $10,000 per cleaning. We also learned that the city was not informed by the designer of this necessary maintenance until after the towers were installed. Did the designer, so focused on the style of the towers, neglect to consider what would be required to keep them looking great? Better or alternative materials could have prevented any such need for this kind of maintenance.

Besides the needs of the light towers, bigger maintenance issues with the lawn areas call into question the designers' consideration of site and the long-term viability of maintaining the park's image. A large majority of the park is covered by golf course-like Paspalum turf. Problems with maintaining these lawn areas surfaced just a few months after the park's unveiling. Over the past summer, large portions of the lawn spaces began turning brown in large patches and required replacement. The cause of the brown spots is unclear and has been a source of contention between the city, the designers, and the contractors. Keeping

these large turf areas as meticulously tidy and green as they appeared soon after the park's opening seems as if it will require a lot of maintenance. That the turf covers sculpted earth mounds won't make matters any easier. We have been told by the designer (and we hope) that this is a temporary issue, but reports from the contractor propose extensive replacement of compacted soils as well as replacement of the irrigation system. These problems have resulted in a delay of the city's official acceptance of the park's completion. The fact that these problems exist tells us that this is a landscape with high demands. The image this park presents will require a lot of work to maintain. We hope the city is up to the task.

That South Pointe Park's style seems to have been given greater priority than its substance is not a criticism unique to this park. Many award-winning and acclaimed parks might be held up to similar criticism (most recently the High Line—see "Back on Track," *Landscape Architecture,* October). Design for style, we suppose, is to be expected when designs are judged heavily on their imagery rather than factors such as user satisfaction or maintainability. Shouldn't there be a method to judge park design in a more sophisticated way?

The aesthetic qualities and variety of visual experiences of South Pointe Park's design certainly make the park stand out. However, its style seems to have come at the neglect (or perhaps even contempt) of usability and context. A picture says a thousand words, but in the case of park design, perhaps that is not enough. Emphasizing intersecting geometries and lavish materials while neglecting more practical considerations leaves spaces that are disconnected from the people they are meant to serve. As it is, South Pointe Park is a space that is to be enjoyed and admired by visitors at a distance or during short visits. It is a park that is certainly beautiful to look at. It is at its best when seen from the window of one of the nearby luxury condo towers or the deck of a passing cruise ship. LAM

Ebru Ozer, Associate ASLA, is an assistant professor in the landscape architecture department of Florida International University in Miami. Douglas Thompson, Associate ASLA, is a designer working for a private landscape architecture firm in Miami.

Shade can be difficult to come by in Miami Beach's newly redesigned South Pointe Park.

IMAGE OF A PUBLIC PARK

Is a park in Miami Beach emphasizing style over substance?

Photos and text by Ebru Ozer, Associate ASLA, and Douglas Thompson, Associate ASLA

IN THE DESIGN OF PUBLIC PARKS, style and aesthetics play a key role in developing engaging and viable spaces. However, park design also requires a balance of substance with style so that spaces also meet the needs and requirements of their users. Sometimes designers focusing on developing a great-looking design concentrate too much on a style at the expense of usability and sustainability. Achieving a certain image becomes the primary goal. Such focus on style independent of contextual issues can result in an awkward space that fails to satisfy its users' needs and its owner's expectations. An overly style-driven landscape can relegate its users to bystanders without any meaningful connection to park and place and can cause a multitude of problems in maintaining the desired image. Parks developed in this way, in the long run, are not sustainable, nor are they truly expressive of well-crafted design.

This past spring, Miami Beach unveiled South Pointe Park to great expectations. The park, designed by Hargreaves and Associates working with local design firm Savino and Miller, was several years in the making. It is a redesign of an existing park at the southern tip of the island that is Miami Beach. The project had a budget of $23 million and included an extensive design development process that involved city officials and members of the community.

We explored South Pointe Park just after it opened and found a park with a level of style and visual appeal that seemed well beyond the typical park in metropolitan Miami. This is a showcase park that in many ways raises the standards of design for public outdoor spaces in southeast Florida, where many parks are not very creative in their expression. South Pointe Park definitely adds some new and welcome dimensions to local park design. Its iconic sculpted mounds bring vertical contrast to the typically flat Florida landscape, while elegant light towers bring interest to the park in the evening. Although at first glance the park was impressive, its disregard for important practical considerations soon became apparent, revealing a park that expresses disdain for its users and its context and left us questioning the designers' wisdom and intentions.

One glaring deficiency of the park's design that is indicative of its disregard for user experience is its shortage of refuge from the often-punishing Miami sun. The park has very few shade trees in most places, with the exception of the parking lot and some areas near the north boundary that are not significantly programmed or inhabitable. Most major pathways and almost every bench in the entire park are devoid of shade. A large majority of the trees that are in the park interior are sabal and coconut palms. Coconut palms, while probably one of the better palms for shade, still leave much to be desired in their provision of relief from the sun, and sabal palms provide almost no shade at all.

Along with the dearth of shade in many areas, the playground *(Continued on Page 130)*

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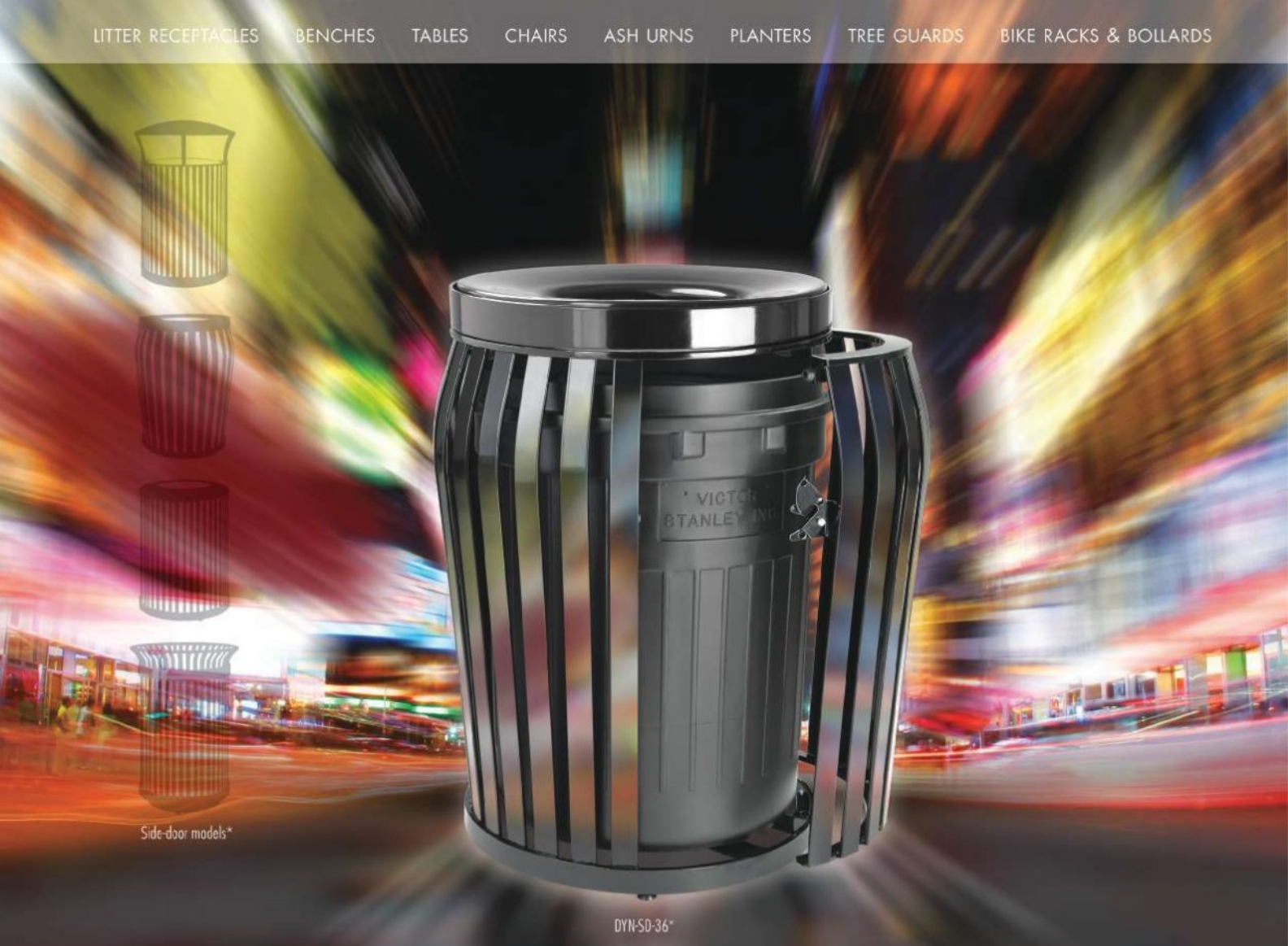

Side-door models*

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*One or more of the following may apply: US Patents D542,993 S; D573,766 S; D441,932 S; D483,538 S; D452,760 S; D487,177 S; D487,537 S; D487,538 S; D458,431 S; D454,238 S; D450,166 S; D476,455 S; D445,982 S; D476,454 S; Canada © 88734; 96040; 98101; 98103; 96108; 96159; US patent(s) pending; Canada reg. pending.

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